ANNEX I

SUMMARY OF PRODUCT CHARACTERISTICS
This medicinal product is subject to additional monitoring. This will allow quick identification of new safety information. Healthcare professionals are asked to report any suspected adverse reactions. See section 4.8 for how to report adverse reactions.

1. NAME OF THE MEDICINAL PRODUCT

MenQuadfi solution for injection
Meningococcal Group A, C, W and Y conjugate vaccine

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

One dose (0.5 mL) contains:

Neisseria meningitidis group A polysaccharide\(^1\) 10 micrograms
Neisseria meningitidis group C polysaccharide\(^1\) 10 micrograms
Neisseria meningitidis group Y polysaccharide\(^1\) 10 micrograms
Neisseria meningitidis group W polysaccharide\(^1\) 10 micrograms

\(^1\)Conjugated to tetanus toxoid carrier protein 55 micrograms

For the full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM

Solution for injection.
Clear colourless solution.

4. CLINICAL PARTICULARS

4.1 Therapeutic indications

MenQuadfi is indicated for active immunisation of individuals from the age of 12 months and older against invasive meningococcal disease caused by Neisseria meningitidis serogroups A, C, W, and Y.

The use of this vaccine should be in accordance with available official recommendations.

4.2 Posology and method of administration

Posology

Primary vaccination:
- Individuals 12 months of age and older: One single dose (0.5 mL).

Booster vaccination:
- A single 0.5 mL dose of MenQuadfi may be used to boost subjects who have previously received a meningococcal vaccine containing the same serogroups (see section 5.1).
- There are no data available to indicate the need for or timing of a booster dose of MenQuadfi (see section 5.1).
Other paediatric population
The safety and immunogenicity of MenQuadfi in individuals under 12 months of age have not yet been established.

Method of administration
For intramuscular injection only, preferably in the deltoid region or anterolateral thigh depending on the recipient's age and muscle mass.

For instructions on handling of the vaccine before administration, see section 6.6.

4.3 Contraindications

Hypersensitivity to the active substances or to any of the excipients listed in section 6.1 or after previous administration of the vaccine or a vaccine containing the same components.

4.4 Special warnings and precautions for use

Traceability
In order to improve the traceability of biological medicinal products, the name and the batch number of the administered product should be clearly recorded.

MenQuadfi should not be administered subcutaneously, intravascularly or intradermally.

It is good clinical practice to precede vaccination by a review of the medical history (especially with regard to previous vaccination and possible occurrence of undesirable effects) and a clinical examination.

Hypersensitivity
As with all injectable vaccines, appropriate medical treatment and supervision should always be readily available in case of an anaphylactic event following administration of the vaccine.

Intercurrent illness
Vaccination should be postponed in individuals suffering from an acute severe febrile illness. However, the presence of a minor infection, such as cold, should not result in the deferral of vaccination.

Syncope
Syncope (fainting) and other anxiety-related reactions can occur following or even before any vaccination as a psychogenic response to the needle injection. Procedures should be in place to prevent falling or injury and to manage syncope.

Thrombocytopenia and coagulation disorders
MenQuadfi should be given with caution to individuals with thrombocytopenia or any coagulation disorder that would contraindicate intramuscular injection, unless the potential benefit clearly outweighs the risk of administration.

Protection
MenQuadfi will only protect against *Neisseria meningitidis* groups A, C, W, and Y. The vaccine will not protect against any other *Neisseria meningitidis* groups.

As with any vaccine, vaccination with MenQuadfi may not protect all vaccine recipients.
Waning of serum bactericidal antibody titres against serogroup A when using human complement in the assay (hSBA) has been reported for other quadrivalent meningococcal vaccines. The clinical relevance of this observation is unknown. No data are available for MenQuadfi.

Lower hSBA geometric mean titres (GMTs) against serogroup A have been observed after a single dose of MenQuadfi was administered to toddlers who previously received serogroup C meningococcal conjugate vaccine (MenC-CRM) during infancy. Nevertheless, seroprotection rates were comparable between treatment groups (see section 5.1). The clinical relevance of this observation is unknown. This aspect might be considered for individuals at high risk for MenA infection who received MenC-CRM vaccine in their first year of life.

**Immunodeficiency**

It may be expected that in patients receiving immunosuppressive treatment or patients with immunodeficiency, an adequate immune response may not be elicited (see section 4.5). Persons with familial complement deficiencies (for example, C5 or C3 deficiencies) and persons receiving treatments that inhibit terminal complement activation (for example, eculizumab) are at increased risk of invasive disease caused by *Neisseria meningitidis* groups A, C, W, and Y, even if they develop antibodies following vaccination with MenQuadfi. No data on immunocompromised patients are available.

**Tetanus immunisation**

Immunisation with MenQuadfi vaccine does not substitute for routine tetanus immunisation. Co-administration of MenQuadfi with a tetanus toxoid-containing vaccine does not impair the response to tetanus toxoid or impact the safety.

**Sodium content**

This medicine contains less than 1 mmol sodium (23 mg) per dose that is to say essentially ‘sodium-free’.

### 4.5 Interaction with other medicinal products and other forms of interaction

**Use with other vaccines**

Injection sites on separate limbs and separate syringes must be used in the case of concomitant administration.

For ages 12-23 months, MenQuadfi can be co-administered with the measles-mumps-rubella vaccine (MMR) + varicella vaccine (V), combined diphtheria - tetanus - acellular pertussis (DTaP) vaccines, including combination DTaP vaccines with hepatitis B (HBV), inactivated poliovirus (IPV) or *Haemophilus influenzae* type b (Hib) such as DTaP-IPV-HB-Hib (Hib conjugated to tetanus toxoid) vaccine and 13-valent pneumococcal polysaccharide conjugated vaccine (PCV-13).

For ages 10-17 years, MenQuadfi can be co-administered with diphtheria, tetanus, pertussis (acellular, component) vaccine (adsorbed, reduced antigen(s) content) (Tdap) and human papillomavirus vaccine (recombinant, adsorbed) (HPV).

MenQuadfi can be administered concomitantly with PCV-13. Lower hSBA GMTs on day 30 post-dose for serogroup A has been observed when given concomitantly. The clinical relevance of this observation is unknown. As a precaution in children 12-23 months of age at high risk for serogroup A disease, consideration might be given for administration of MenQuadfi and PCV-13 vaccines separately.

Meningococcal vaccine naïve children aged 10-17 years had non inferior response for PT and lower antibody responses to FHA, PRN and FIM when Tdap vaccine was administered concomitantly with MenQuadfi and HPV compared to co-administration with HPV vaccine alone. The clinical implications
of the observed pertussis antigen responses also observed with the existing quadrivalent meningococcal conjugate vaccines are unknown.

Concomitant vaccines should always be administered at separate injection sites and preferably contralateral.

Concomitant administration of MenQuadfi and other vaccines than those listed above has not been studied.

Use with systemic immunosuppressive medicinal products
It may be expected that in patients receiving immunosuppressive treatment an adequate immune response may not be elicited (see also section 4.4).

4.6 Fertility, pregnancy and lactation

Pregnancy
There is limited amount of data on the use of MenQuadfi in pregnant women. Animal studies do not indicate direct or indirect harmful effects with respect to reproductive toxicity (see section 5.3). MenQuadfi should be used during pregnancy only if the expected benefits for the mother outweigh the potential risks, including those for the foetus.

Breast-feeding
It is unknown whether MenQuadfi is excreted in human milk. MenQuadfi should only be used during breast-feeding when the possible advantages outweigh the potential risks.

Fertility
A developmental and reproductive toxicity study was performed in female rabbits. There were no effects on mating performances or female fertility. No study was conducted on male fertility (see section 5.3).

4.7 Effects on ability to drive and use machines

MenQuadfi has no or negligible influence on the ability to drive and use machines. However, some of the effects mentioned under section 4.8 “Undesirable effects” may temporarily affect the ability to drive or use machines.

4.8 Undesirable effects

Summary of the safety profile
The safety of a single dose of MenQuadfi in individuals 12 months of age and older was evaluated in seven randomized, active-controlled, multi-centre pivotal studies. In these studies, 6,308 subjects received either a primary dose (N=5,906) or a booster dose (N=402) of MenQuadfi and were included in the safety analyses. This included 1,389 toddlers aged 12 through 23 months of age, 498 children aged 2 through 9 years, 2,289 adolescents aged 10 through 17 years, 1,684 adults aged 18 through 55 years, 199 older adults aged 56 through 64 years, and 249 elderly aged 65 years and older. Of these, 392 adolescents received MenQuadfi co-administered with Tdap and HPV, and 589 toddlers received MenQuadfi co-administered with MMR-V (N=189), DTaP-IPV-HB-Hib (N=200) or PCV-13 (N=200).

The most frequently reported adverse reactions within 7 days after vaccination with a single dose of MenQuadfi alone in toddlers 12 through 23 months of age were irritability (36.7%) and injection site
tenderness (30.6%) and in ages 2 years and above were injection site pain (38.7%) and myalgia (30.5%). These adverse reactions were mostly mild or moderate in intensity.

Rates of adverse reactions after a booster dose of MenQuadfi in adolescents and adults at least 15 years of age were comparable to those seen in adolescents and adults who received a primary dose of MenQuadfi.

Rates of adverse reactions within 7 days following vaccination among toddlers were comparable when MMR+V were given concomitantly with or without MenQuadfi, and when DTaP-IPV-HB-Hib was given with or without MenQuadfi. Overall, the rates of adverse reactions were higher in toddlers who received PCV-13 given concomitantly with MenQuadfi (36.5%) than in toddlers who received PCV-13 alone (17.2%).

**Tabulated list of adverse reactions**

The following adverse reactions, as listed below, have been identified from clinical studies conducted with MenQuadfi when given alone to subjects 2 years of age and older. The safety profile observed in toddlers aged 12 through 23 months is presented in the paediatric population section. The adverse reactions are listed according to the following frequency categories:

- Very common (≥1/10);
- Common (≥1/100 to <1/10);
- Uncommon (≥1/1,000 to <1/100);
- Rare (≥1/10,000 to <1/1,000).

Within each frequency grouping, adverse reactions are presented in order of decreasing seriousness.

**Table 1: Tabulated summary of adverse reactions following administration of MenQuadfi from clinical trials in subjects 2 years of age and above**

<table>
<thead>
<tr>
<th>MedDRA System Organ Class</th>
<th>Frequency</th>
<th>Adverse reactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood and lymphatic system disorders</td>
<td>Rare</td>
<td>Lymphadenopathy</td>
</tr>
<tr>
<td>Nervous system disorders</td>
<td>Very common</td>
<td>Headache</td>
</tr>
<tr>
<td></td>
<td>Uncommon</td>
<td>Dizziness</td>
</tr>
<tr>
<td>Gastrointestinal disorders</td>
<td>Uncommon</td>
<td>Vomiting, nausea</td>
</tr>
<tr>
<td></td>
<td>Rare</td>
<td>Diarrhoea, stomach pain</td>
</tr>
<tr>
<td>Skin and subcutaneous tissue disorders</td>
<td>Rare</td>
<td>Urticaria, pruritus, rash</td>
</tr>
<tr>
<td>Musculoskeletal and connective tissue disorders</td>
<td>Very common</td>
<td>Myalgia</td>
</tr>
<tr>
<td></td>
<td>Rare</td>
<td>Pain in extremity</td>
</tr>
<tr>
<td>General disorders and administration site conditions</td>
<td>Very common</td>
<td>Malaise</td>
</tr>
<tr>
<td></td>
<td>Common</td>
<td>Fever</td>
</tr>
<tr>
<td></td>
<td>At the injection site: swelling, erythema</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Uncommon</td>
<td>Fatigue</td>
</tr>
<tr>
<td></td>
<td>At the injection site: pruritus, warmth, bruising, rash</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rare</td>
<td>Chills, axillary pain</td>
</tr>
<tr>
<td></td>
<td>At the injection site: induration</td>
<td></td>
</tr>
</tbody>
</table>

**Paediatric population**

The safety profile of MenQuadfi in children and adolescents 2 through 17 years of age was generally comparable to that in adults. Injection site erythema and swelling at the MenQuadfi injection site were
reported more frequently in children 2 through 9 years of age (very common) than in the older age groups.

In toddlers 12 through 23 months of age, injection site erythema and swelling (very common) at the MenQuadfi injection site, vomiting (common) and diarrhoea (common), were reported more frequently than in the older age groups. The following additional reactions, as listed below in Table 2, have been reported very commonly or commonly following administration of MenQuadfi in toddlers during clinical trials:

Table 2: Tabulated summary of adverse reactions following administration of MenQuadfi from clinical trials in subjects 12 months through 23 months

<table>
<thead>
<tr>
<th>MedDRA System Organ Class</th>
<th>Frequency</th>
<th>Adverse reactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metabolic and nutrition disorders</td>
<td>Very common</td>
<td>Appetite lost</td>
</tr>
<tr>
<td>Psychiatric disorders</td>
<td>Very common</td>
<td>Irritability</td>
</tr>
<tr>
<td></td>
<td>Uncommon</td>
<td>Insomnia</td>
</tr>
<tr>
<td>Nervous system disorders</td>
<td>Very common</td>
<td>Drowsiness</td>
</tr>
<tr>
<td>Gastrointestinal disorders</td>
<td>Common</td>
<td>Vomiting, diarrhoea</td>
</tr>
<tr>
<td>Skin and subcutaneous tissue disorders</td>
<td>Uncommon</td>
<td>Urticaria</td>
</tr>
<tr>
<td>General disorders and administration site conditions</td>
<td>Very Common</td>
<td>Abnormal crying</td>
</tr>
<tr>
<td></td>
<td></td>
<td>At the injection site: tenderness/pain, erythema, swelling</td>
</tr>
<tr>
<td></td>
<td>Common</td>
<td>Fever</td>
</tr>
<tr>
<td></td>
<td>Uncommon</td>
<td>At the injection site: pruritus, induration, bruising, rash</td>
</tr>
</tbody>
</table>

Older population
Overall, within 7 days after vaccination with a single dose of MenQuadfi, the same injection site and systemic adverse reactions were observed in older (≥56 years of age) and younger adults (18 through 55 years old) but at lower frequencies; except for injection site pruritus, which was more frequent (common) in older adults. These adverse reactions mostly were mild or moderate in intensity.

Reporting of suspected adverse reactions
Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via the national reporting system listed in Appendix V.

4.9 Overdose

Overdose with MenQuadfi is unlikely due to its presentation as a single dose vial. In the event of overdose, monitoring of vital functions and possible symptomatic treatment is recommended.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: meningococcal vaccines

ATC code: J07AH08
Mechanism of action
Anti-capsular meningococcal antibodies protect against meningococcal diseases via complement mediated bactericidal activity. MenQuadFi induces the production of bactericidal antibodies specific to the capsular polysaccharides of Neisseria meningitidis serogroups A, C, W, and Y.

Immunogenicity
The immunogenicity of a single dose of MenQuadFi for primary vaccination in toddlers (12-23 months of age), children and adolescents (2-17 years of age), adults (18-55 years of age) and older adults (56 years and above) was assessed in six pivotal studies and in one post licensure supportive study in toddlers (12-23 months of age). The immunogenicity of a single dose of MenQuadFi for booster vaccination (subjects 15 to 55 years of age) was assessed in one pivotal study. In addition, antibody persistence after primary vaccination and immunogenicity of a booster dose was assessed in one post licensure supportive study in children (4-5 years of age).

Primary immunogenicity analyses were conducted by measuring serum bactericidal activity (SBA) using human serum as the source of exogenous complement (hSBA). Rabbit complement (rSBA) data are available in subsets in all age groups and generally follows the trends observed with human complement (hSBA) data. In addition, all subjects were assessed for primary immunogenicity measured by hSBA and rSBA for serogroup C in MEQ00065 study [NCT03890367].

Clinical data on the persistence of antibody response 3 years after primary vaccination with MenQuadFi at 12-23 months of age are available in children 4-5 years of age. Clinical data on booster vaccination with MenQuadFi in those children are also available.

Toddlers 12 to 23 month of age
Immunogenicity in subjects 12 through 23 months of age was evaluated in three clinical studies (MET51 [NCT02955797], MET57 [NCT03205371] and MEQ00065 [NCT03890367]).

MET51 was conducted in subjects who were either meningococcal vaccine naïve or had been primed with monovalent meningococcal C conjugate vaccines in their first year of life (see table 3).

Table 3: Comparison of bactericidal antibody responses to MenQuadFi and MenACWY-TT vaccine 30 days after vaccination of meningococcal vaccine naïve subjects only or combined ( naïve + MenC primed) subjects 12 through 23 months of age (study MET51*)

<table>
<thead>
<tr>
<th>Endpoint by Serogroup</th>
<th>MenQuadFi (95% CI) Naïve</th>
<th>MenACWY-TT (95% CI) Naïve</th>
<th>MenQuadFi (95% CI) Combined (Naïve + MenC Primed)</th>
<th>MenACWY-TT (95% CI) Combined (Naïve + MenC Primed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>N=293</td>
<td>90.8 (86.9; 93.8)</td>
<td>90.4 (87.4; 92.9)</td>
<td>91.6 (88.4; 94.2)</td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)**</td>
<td>90.8 (86.9; 93.8)</td>
<td>89.5 (85.4; 92.7)</td>
<td>87.5 (82.5; 90.2)</td>
<td>87.1 (82.6; 91.2)</td>
</tr>
<tr>
<td>% Seroresponse</td>
<td>76.8 (71.5; 81.5)</td>
<td>72.5 (67.1; 77.6)</td>
<td>72.5 (67.1; 77.6)</td>
<td>77.1 (72.6; 81.2)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>28.7 (25.2; 32.6)</td>
<td>28.0 (24.4; 32.1)</td>
<td>29.9 (26.9; 33.2)</td>
<td>34.5 (30.5; 39.0)</td>
</tr>
<tr>
<td>C</td>
<td>N=293</td>
<td>28.7 (25.2; 32.6)</td>
<td>29.9 (26.9; 33.2)</td>
<td>34.5 (30.5; 39.0)</td>
</tr>
</tbody>
</table>
### Endpoint by Serogroup

<table>
<thead>
<tr>
<th></th>
<th>MenQuadfi (95% CI)</th>
<th>MenACWY-TT (95% CI)</th>
<th>MenQuadfi (95% CI)</th>
<th>MenACWY-TT (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Naïve</td>
<td>Naïve</td>
<td>Combined (Naïve + MenC Primed)</td>
<td>Combined (Naïve + MenC Primed)</td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)**</td>
<td>99.3 (97.6; 99.9)</td>
<td>81.4 (76.4; 85.6)</td>
<td>99.2 (97.9; 99.8)</td>
<td>85.5 (81.7; 88.9)</td>
</tr>
<tr>
<td>% Seroresponse</td>
<td>98.3 (96.1; 99.4)</td>
<td>71.5 (66.0; 76.6)</td>
<td>97.1 (95.2; 98.4)</td>
<td>77.4 (72.9; 81.4)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>436 (380; 500)</td>
<td>26.4 (22.5; 31.0)</td>
<td>880 (748; 1035)</td>
<td>77.1 (60.7; 98.0)</td>
</tr>
<tr>
<td><strong>W</strong></td>
<td>N=293</td>
<td>N=296</td>
<td>N=489</td>
<td>N=393-394</td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)**</td>
<td>83.6 (78.9; 87.7)</td>
<td>83.4 (78.7; 87.5)</td>
<td>84.9 (81.4; 87.9)</td>
<td>84.0 (80.0; 87.5)</td>
</tr>
<tr>
<td>% Seroresponse</td>
<td>67.6 (61.9; 72.9)</td>
<td>66.6 (60.9; 71.9)</td>
<td>70.8 (66.5; 74.8)</td>
<td>68.4 (63.6; 73.0)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>22.0 (18.9; 25.5)</td>
<td>16.4 (14.4; 18.6)</td>
<td>24.4 (21.8; 27.5)</td>
<td>17.7 (15.8; 19.8)</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td>N=293</td>
<td>N=296</td>
<td>N=488-490</td>
<td>N=394-395</td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)**</td>
<td>93.2 (89.7; 95.8)</td>
<td>91.6 (87.8; 94.5)</td>
<td>94.3 (91.8; 96.2)</td>
<td>91.6 (88.5; 94.2)</td>
</tr>
<tr>
<td>% Seroresponse</td>
<td>81.9 (77.0; 86.1)</td>
<td>79.1 (74.0; 83.5)</td>
<td>84.8 (81.3; 87.9)</td>
<td>78.9 (74.6; 82.9)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>38.0 (33.0; 43.9)</td>
<td>32.2 (28.0; 37.0)</td>
<td>41.7 (37.5; 46.5)</td>
<td>31.9 (28.4; 36.0)</td>
</tr>
</tbody>
</table>

* Clinical trial identifier NCT02955797

N: number of subjects in the per-protocol analysis set with valid serology results.

95% CI of the single proportion calculated from the exact binomial method.

** Non-inferiority criterion met

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**Response in subjects previously vaccinated with MenC conjugate vaccines in their first year of life:**

The majority of monovalent meningococcal C conjugate vaccine primed toddlers (12-23 months of age) in study MET51 (NCT02955797) had hSBA titres ≥1:8 in the MenQuadfi group (N=198) (≥ 86.7%) and in MenACWY-TT group (N=99) (≥ 85.7%) at D30 post-vaccination. These toddlers received during their infancy MenC-TT or MenC-CRM vaccines. Post-vaccination seroprotection rates were comparable between MenQuadfi and MenACWY-TT for all serogroups regardless of the priming background.

In MenC-CRM primed subjects the GMTs for serogroup A were lower in the MenQuadfi group (n=49) than in the MenACWY-TT group (n=25) [12.0 (8.23; 17.5) vs 42.2 (25.9; 68.8)]. After administration of Menquadfi seroprotection rates (hSBA titres ≥1:8) for subjects primed with MenC-CRM were lower but still comparable for serogroups A, Y and W compared with those in the MenACWY-TT group [A: 68.8% (53.7; 81.3) vs 96.0% (79.6; 99.9); Y: 95.8% (85.7; 99.5) vs 80.0% (59.3; 93.2); W: 68.1% (52.9; 80.9) vs 79.2% (57.8; 92.9)]. The rates for serogroup C were comparable in both groups [95.7% (85.5; 99.5) vs 92.0% (74.0; 99.0)]. The clinical relevance of these results is unknown. This aspect might be considered for individuals at high risk for MenA infection who received MenC-CRM vaccine in their first year of life.

MET57 (NCT03205371) was conducted in meningococcal vaccine naïve toddlers 12 through 23 months of age to assess the immunogenicity of the concomitant administration of MenQuadfi with paediatric vaccines (MMR+V, DTaP-IPV-HB-Hib or PCV-13). Overall, the post-vaccination hSBA seroprotection...
rates in subjects who received MenQuadfi was high for all serogroups (between 88.9% and 100%). Seroresponse and seroprotection rates for serogroup A were comparable when MenQuadfi was co-administered with PCV-13 and alone (56.1%, [95% CI 48.9; 63.2] and 83.7% [95% CI 77.7; 88.6] vs 71.9% [95%CI 61.8; 80.6] and 90.6% [95%CI 82.9; 95.6]). There were differences in the hSBA GMTs for serogroup A when MenQuadfi was co-administered with PCV-13 (n=196) compared with MenQuadfi administered alone (n=96) (24.6 [95%CI 20.2; 30.1] and 49.0 [95%CI 36.8; 65.3]). The clinical relevance of these results is unknown but this observation might be taken into consideration for individuals at high risk for MenA infection and consequently vaccinations with MenQuadfi and PCV13 might be performed separately.

MEQ00065 (NCT03890367) study was conducted in meningococcal vaccine naïve toddlers 12 through 23 months of age to assess the immunogenicity of serogroup C using hSBA and rSBA assays following administration of a single dose of MenQuadfi compared to MenACWY-TT or to MenC-TT.

Superiority of MenQuadfi was demonstrated in comparison to MenACWY-TT vaccine for the hSBA seroprotection rate and hSBA and rSBA GMTs to meningococcal serogroup C. Non-inferiority was demonstrated for the rSBA seroprotection rate to meningococcal serogroup C.

Superiority of MenQuadfi was also demonstrated in comparison to MenC-TT vaccine for the rSBA and hSBA GMTs to meningococcal serogroup C and non-inferiority was demonstrated for the rSBA and hSBA seroprotection rates to meningococcal serogroup C (see table 4).

| Table 4: Comparison of hSBA and rSBA bactericidal antibody responses for serogroup C to MenQuadfi, MenACWY-TT and MenC-TT vaccines 30 days after vaccination of meningococcal vaccine naïve subjects 12 through 23 months of age (study MEQ00065*) |
|---|---|---|---|---|---|
| **Endpoints** | **MenQuadfi (95% CI)** | **MenACWY-TT (95% CI)** | **MenC-TT (95% CI)** | **MenQuadfi (95% CI)** | **MenACWY-TT (95% CI)** | **MenC-TT (95% CI)** |
| **hSBA** | N=214 | N=211 | N=216 | N=213 | N=210 | N=215 |
| **% ≥1:8 (Seroprotection)** | 99.5#§ (97.4; 100) | 89.1 (84.1; 93.0) | 99.5 (97.4; 100) | 100§ (98.3; 100) | 94.8 (90.8; 97.4) | 100 (98.3; 100) |
| **% Seroresponse** | 99.5 (97.4; 100) | 83.4 (77.7; 88.2) | 99.1 (96.7; 99.9) | 99.5 (97.4; 100) | 92.9 (88.5; 95.9) | 99.5 (97.4; 100) |
| **GMTs** | 515$ (450; 591) | 31.6 (26.5; 37.6) | 227 (198; 260) | 2143¥ (1870; 2456) | 315 (252; 395) | 1624 (1425; 1850) |

* Clinical trial identifier NCT03890367

# superiority of MenQuadfi demonstrated versus MenACWY-TT (hSBA seroprotection rates)

§ non inferiority of MenQuadfi demonstrated versus MenC-TT (hSBA seroprotection rates)

$ superiority of MenQuadfi demonstrated versus MenACWY-TT and MenC-TT (hSBA GMTs)

¶ non inferiority of MenQuadfi demonstrated versus MenACWY-TT and MenC-TT (rSBA seroprotection rates)

¥ superiority of MenQuadfi demonstrated versus MenACWY-TT and MenC-TT (rSBA GMTs)
N = number of subjects in the per-protocol analysis set with valid serology results
95% CI of the single proportion calculated from the exact binomial method

Immunogenicity booster and persistence response
MET62 (NCT03476135) evaluated the antibody persistence of a primary dose, immunogenicity and the safety of a booster dose of MenQuadfi in children 4-5 years of age. These children were primed with a single dose of MenQuadfi or MenACWY-TT 3 years before as part of the phase II study MET54 when they were 12-23 months old. The antibody persistence prior to the MenQuadfi booster dose and the booster immune response were assessed according to the vaccine (MenQuadfi or MenACWY-TT) children had received 3 years ago (see table 5).

For all serogroups, hSBA GMTs were higher at D30 post-primary dose than at D0 pre-booster dose for MenQuadfi or MenACWY-TT. The pre-booster GMTs were higher than the pre-primary dose, indicative of long-term persistence of immune response.

After the booster dose, seroprotection rates were nearly 100% for all serogroups in children primed with MenQuadfi.

Table 5: Comparison of bactericidal antibody response 30 days after booster vaccination, and persistence in children (4-5 years) primed with MenQuadfi or MenACWY-TT 3 years before in study MET54* – (study MET62**)

<table>
<thead>
<tr>
<th>Serogroup Endpoint</th>
<th>MenQuadfi Booster in MenQuadfi primed (95% CI)</th>
<th>MenQuadfi Booster in MenACWY-TT primed (95% CI)</th>
<th>MenQuadfi Booster in MenQuadfi primed + MenACWY-TT primed (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Persistence&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Booster&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Persistence&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>D30 Post primary dose</td>
<td>D0-Pre-booster dose</td>
<td>D30 Post primary dose</td>
</tr>
<tr>
<td>A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>97.6 (87.4; 99.9)</td>
<td>66.7 (50.5; 80.4)</td>
<td>100 (91.2; 100)</td>
</tr>
<tr>
<td>% Seroresponse</td>
<td>-</td>
<td>-</td>
<td>100 (91.2; 100)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>83.3 (63.9; 109)</td>
<td>11.9 (8.11; 17.4)</td>
<td>763 (521; 1117)</td>
</tr>
<tr>
<td>B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>100 (91.6; 100)</td>
<td>100 (91.6; 100)</td>
<td>100 (91.2; 100)</td>
</tr>
<tr>
<td>% Seroresponse</td>
<td>-</td>
<td>-</td>
<td>95.0 (83.1; 99.4)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>594 (445; 793)</td>
<td>103 (71.7; 149)</td>
<td>5894 (4325; 8031)</td>
</tr>
<tr>
<td>C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>100 (91.6; 100)</td>
<td>97.6 (87.4; 99.9)</td>
<td>97.5 (86.8; 99.9)</td>
</tr>
<tr>
<td>% Seroresponse</td>
<td>-</td>
<td>-</td>
<td>97.5 (86.6; 99.9)</td>
</tr>
</tbody>
</table>
### Children 2 through 9 years of age

Immunogenicity in subjects 2 through 9 years of age was evaluated in study MET35 (NCT03077438) (stratified by ages 2 through 5 and 6 through 9 years) comparing seroresponses following administration of either MenQuadfi or MenACWY-CRM.

Overall, for subjects 2 through 9 years of age, immune non-inferiority, based on hSBA seroresponse, was demonstrated for MenQuadfi as compared to MenACWY-CRM for all four serogroups.

#### Table 6: Comparison of bactericidal antibody responses to MenQuadfi and MenACWY-CRM 30 days after vaccination in meningococcal vaccine naïve subjects 2 through 5 years and 6 through 9 years of age (study MET35*)

<table>
<thead>
<tr>
<th>Endpoint by Serogroup</th>
<th>MenQuadfi (95% CI)</th>
<th>MenACWY-CRM (95% CI)</th>
<th>MenQuadfi (95% CI)</th>
<th>MenACWY-CRM (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>N=227-228</td>
<td>N=221</td>
<td>N=228</td>
<td>N=237</td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>84.6 (79.3; 89.1)</td>
<td>76.5 (70.3; 81.9)</td>
<td>88.2 (83.2; 92.0)</td>
<td>81.9 (76.3; 86.5)</td>
</tr>
<tr>
<td>% Seroresponse</td>
<td>52.4 (45.7; 59.1)</td>
<td>44.8 (38.1; 51.6)</td>
<td>58.3 (51.6; 64.8)</td>
<td>50.6 (44.1; 57.2)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>21.6 (18.2; 25.5)</td>
<td>18.9 (15.5; 23.0)</td>
<td>28.4 (23.9; 33.8)</td>
<td>26.8 (22.0; 32.6)</td>
</tr>
<tr>
<td>C</td>
<td>N=229</td>
<td>N=222-223</td>
<td>N=229</td>
<td>N=236</td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>97.4 (94.4; 99.0)</td>
<td>64.6 (57.9; 70.8)</td>
<td>98.3 (95.6; 99.5)</td>
<td>69.5 (63.2; 75.3)</td>
</tr>
<tr>
<td>% Seroresponse</td>
<td>94.3 (90.5; 96.9)</td>
<td>43.2 (36.6; 50.0)</td>
<td>96.1 (92.7; 98.2)</td>
<td>52.1 (45.5; 58.6)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>208 (175; 246)</td>
<td>11.9 (9.79; 14.6)</td>
<td>272 (224; 330)</td>
<td>23.7 (18.2; 31.0)</td>
</tr>
</tbody>
</table>
Children and adolescents 10 through 17 years of age

Immunogenicity in subjects aged 10 through 17 years of age was evaluated in two studies comparing seroresponses following administration of MenQuadfi compared to either MenACWY-CRM (MET50 [NCT02199691]) or MenACWY-DT (MET43 [NCT02842853]).

MET50 was conducted in meningococcal vaccine naïve subjects and seroresponse was evaluated following administration with either MenQuadfi alone, MenACWY-CRM alone, MenQuadfi co-administered with Tdap and HPV or Tdap and HPV alone.

Table 7: Comparison of bactericidal antibody responses to MenQuadfi and MenACWY-CRM 30 days after vaccination in meningococcal vaccine naïve subjects 10 through 17 years of age (study MET50*)

<table>
<thead>
<tr>
<th>Endpoint by Serogroup</th>
<th>MenQuadfi (95% CI)</th>
<th>MenACWY-CRM (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>93.5 (90.9; 95.6)</td>
<td>82.8 (79.0; 86.1)</td>
</tr>
<tr>
<td>% Seroresponse**##</td>
<td>75.6 (71.4; 79.4)</td>
<td>66.4 (61.9; 70.7)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>44.1 (39.2; 49.6)</td>
<td>35.2 (30.3; 41.0)</td>
</tr>
<tr>
<td><strong>C</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>98.5 (96.9; 99.4)</td>
<td>76.0 (71.9; 79.8)</td>
</tr>
<tr>
<td>% Seroresponse**##</td>
<td>97.2 (95.2; 98.5)</td>
<td>72.6 (68.3; 76.6)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>387 (329; 456)</td>
<td>51.4 (41.2; 64.2)</td>
</tr>
<tr>
<td><strong>W</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>99.1 (97.8; 99.8)</td>
<td>90.7 (87.7; 93.2)</td>
</tr>
<tr>
<td>% Seroresponse**##</td>
<td>86.2 (82.7; 89.2)</td>
<td>66.6 (62.1; 70.9)</td>
</tr>
<tr>
<td>Endpoint by Serogroup</td>
<td>MenQuadfi (95% CI)</td>
<td>MenACWY-CRM (95% CI)</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>86.9 (77.8; 97.0)</td>
<td>36.0 (31.5; 41.0)</td>
</tr>
<tr>
<td>Y</td>
<td>N=463</td>
<td>N=464</td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>97.2 (95.2; 98.5)</td>
<td>83.2 (79.5; 86.5)</td>
</tr>
<tr>
<td>% Seroresponse**#</td>
<td>97.0 (95.0; 98.3)</td>
<td>80.8 (76.9; 84.3)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>75.7 (66.2; 86.5)</td>
<td>27.6 (23.8; 32.1)</td>
</tr>
</tbody>
</table>

* Clinical trial identifier NCT02199691

N: number of subjects in the per-protocol analysis set with valid serology results.

95% CI of the single proportion calculated from the exact binomial method.

** Post-vaccination hSBA titres ≥1:8 for subjects with pre-vaccination hSBA titres < 1:8 or at least a 4-fold increase in hSBA titres from pre to post-vaccination for subjects with pre-vaccination hSBA titres ≥1:8

# Non-inferiority criterion met.

Study MET43 was performed to evaluate the immunogenicity of MenQuadfi compared to MenACWY-DT in children, adolescents and adults (10-55 years of age).

### Table 8: Comparison of bactericidal antibody responses to MenQuadfi and MenACWY-DT 30 days after vaccination in meningococcal vaccine naïve subjects 10 through 17 years of age (study MET43*)

<table>
<thead>
<tr>
<th>Endpoint by Serogroup</th>
<th>MenQuadfi (95% CI)</th>
<th>MenACWY-DT (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>N=1,097</td>
<td>N=300</td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>96.2 (94.9; 97.2)</td>
<td>89.0 (84.9; 92.3)</td>
</tr>
<tr>
<td>% Seroresponse**</td>
<td>74.0 (71.3; 76.6)</td>
<td>55.3 (49.5; 61.0)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>78 (71.4; 85.2)</td>
<td>44.2 (36.4; 53.7)</td>
</tr>
<tr>
<td>C</td>
<td>N=1,097-1,098</td>
<td>N=300</td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>98.5 (97.5; 99.1)</td>
<td>74.7 (69.3; 79.5)</td>
</tr>
<tr>
<td>% Seroresponse**</td>
<td>95.6 (94.2; 96.8)</td>
<td>53.3 (47.5; 59.1)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>504 (456; 558)</td>
<td>44.1 (33.7; 57.8)</td>
</tr>
<tr>
<td>W</td>
<td>N=1,097</td>
<td>N=300</td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>98.3 (97.3; 99.0)</td>
<td>93.7 (90.3; 96.1)</td>
</tr>
<tr>
<td>% Seroresponse**</td>
<td>84.5 (82.2; 86.6)</td>
<td>72.0 (66.6; 77.0)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>97.2 (88.3; 107)</td>
<td>59.2 (49.1; 71.3)</td>
</tr>
<tr>
<td>Y</td>
<td>N=1,097</td>
<td>N=300</td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>99.1 (98.3; 99.6)</td>
<td>94.3 (91.1; 96.7)</td>
</tr>
<tr>
<td>% Seroresponse**</td>
<td>95.6 (94.2; 96.8)</td>
<td>85.7 (81.2; 89.4)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>208 (189; 228)</td>
<td>80.3 (65.6; 98.2)</td>
</tr>
</tbody>
</table>

* Clinical trial identifier NCT02842853

N: number of subjects in the per-protocol analysis set with valid serology results.

95% CI of the single proportion calculated from the exact binomial method.

** Non-inferiority criterion met.

Adults 18 through 55 years of age

Immunogenicity in subjects from 18 through 55 years of age was evaluated in study MET43 (NCT02842853) comparing MenQuadfi to MenACWY-DT.
Table 9: Comparison of bactericidal antibody responses to MenQuadfi and MenACWY-DT 30 days after vaccination in meningococcal vaccine naïve subjects 18 through 55 years of age (study MET43*)

<table>
<thead>
<tr>
<th>Endpoint by Serogroup</th>
<th>MenQuadfi (95% CI)</th>
<th>MenACWY-DT (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=1,406-1,408</td>
<td>N=293</td>
</tr>
<tr>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>93.5 (92.1; 94.8)</td>
<td>88.1 (83.8; 91.5)</td>
</tr>
<tr>
<td>% Seroresponse**</td>
<td>73.5 (71.2; 75.8)</td>
<td>53.9 (48.0; 59.7)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>106 (97.2; 117)</td>
<td>52.3 (42.8; 63.9)</td>
</tr>
<tr>
<td>C</td>
<td>N=1,406-1,408</td>
<td>N=293</td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>93.5 (92.0; 94.7)</td>
<td>77.8 (72.6; 82.4)</td>
</tr>
<tr>
<td>% Seroresponse**</td>
<td>83.4 (81.4; 85.3)</td>
<td>42.3 (36.6; 48.2)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>234 (210; 261)</td>
<td>37.5 (29.0; 48.5)</td>
</tr>
<tr>
<td>W</td>
<td>N=1,408-1,410</td>
<td>N=293</td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>94.5 (93.2; 95.7)</td>
<td>80.2 (75.2; 84.6)</td>
</tr>
<tr>
<td>% Seroresponse**</td>
<td>77.0 (74.7; 79.2)</td>
<td>50.2 (44.3; 56.0)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>75.6 (68.7; 83.2)</td>
<td>33.2 (26.3; 42.0)</td>
</tr>
<tr>
<td>Y</td>
<td>N=1,408-1,410</td>
<td>N=293</td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>98.6 (97.8; 99.1)</td>
<td>81.2 (76.3; 85.5)</td>
</tr>
<tr>
<td>% Seroresponse**</td>
<td>88.1 (86.3; 89.8)</td>
<td>60.8 (54.9; 66.4)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>219 (200; 239)</td>
<td>54.6 (42.3; 70.5)</td>
</tr>
</tbody>
</table>

* Clinical trial identifier NCT02842853
N: number of subjects in the per-protocol analysis set with valid serology results.
95% CI of the single proportion calculated from the exact binomial method.
** Non-inferiority criterion met.

Adults 56 years of age and older
Immunogenicity in adults ≥ 56 years of age (mean 67.1 years, range 56.0 – 97.2 years) was assessed in study MET49 (NCT02842866) comparing the immunogenicity of MenQuadfi to MenACWY polysaccharide vaccine.

Table 10: Comparison of bactericidal antibody responses to MenQuadfi and MenACWY polysaccharide in meningococcal vaccine naïve in subjects 56 years of age and older 30 days after vaccination (study MET49*)

<table>
<thead>
<tr>
<th>Serogroup Endpoint</th>
<th>MenQuadfi (95% CI)</th>
<th>MenACWY polysaccharide (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=433</td>
<td>N=431</td>
</tr>
<tr>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>89.4 (86.1; 92.1)</td>
<td>84.2 (80.4; 87.5)</td>
</tr>
<tr>
<td>% Seroresponse**</td>
<td>58.2 (53.4; 62.9)</td>
<td>42.5 (37.7; 47.3)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>55.1 (46.8; 65.0)</td>
<td>31.4 (26.9; 36.7)</td>
</tr>
<tr>
<td>C</td>
<td>N=433</td>
<td>N=431</td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>90.1 (86.9; 92.7)</td>
<td>71.0 (66.5; 75.2)</td>
</tr>
<tr>
<td>% Seroresponse**</td>
<td>77.1 (72.9; 81.0)</td>
<td>49.7 (44.8; 54.5)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>101 (83.8; 123)</td>
<td>24.7 (20.7; 29.5)</td>
</tr>
<tr>
<td>W</td>
<td>N=433</td>
<td>N=431</td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>77.4 (73.1; 81.2)</td>
<td>63.1 (58.4; 67.7)</td>
</tr>
</tbody>
</table>
### Table 11: Comparison of bactericidal antibody responses to MenQuadfi and MenACWY-DT 30 days after booster vaccination (study MET56*)

<table>
<thead>
<tr>
<th>Serogroup Endpoint</th>
<th>MenQuadfi (95% CI)</th>
<th>MenACWY-DT (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Seroresponse**</td>
<td>62.6 (57.8; 67.2)</td>
<td>44.8 (40.0; 49.6)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>28.1 (23.7; 33.3)</td>
<td>15.5 (13.0; 18.4)</td>
</tr>
<tr>
<td>**Y</td>
<td>N=433</td>
<td>N=431</td>
</tr>
<tr>
<td>% ≥1:8 (Seroprotection)</td>
<td>91.7 (88.7; 94.1)</td>
<td>67.7 (63.1; 72.1)</td>
</tr>
<tr>
<td>% Seroresponse**</td>
<td>74.4 (70.0; 78.4)</td>
<td>43.4 (38.7; 48.2)</td>
</tr>
<tr>
<td>hSBA GMT</td>
<td>69.1 (58.7; 81.4)</td>
<td>21.0 (17.4; 25.3)</td>
</tr>
</tbody>
</table>

* Clinical trial identifier NCT02752906

N: number of subjects in the per-protocol analysis set with valid serology results.

95% CI of the single proportion calculated from the exact binomial method.

** Non-inferiority criterion met.
Clinical data on the persistence of antibody response 3 years after primary vaccination with MenQuadfi at 12-23 months of age are available in children 4-5 years of age. Clinical data on booster vaccination with MenQuadfi in those children are also available.

The European Medicines Agency has deferred the obligation to submit the results of studies within one or more subsets of the paediatric population under 12 months of age (see 4.2 for information on paediatric use).

5.2 Pharmacokinetic properties

No pharmacokinetic studies have been performed.

5.3 Preclinical safety data

Non-clinical safety data revealed no special risks for humans based on a developmental and reproductive toxicity study in female rabbits.

The administration of MenQuadfi to female rabbits at a full human dose showed no effects on mating performance, female fertility, no teratogenic potential, and no effect on pre- or post-natal development.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Sodium chloride
Sodium acetate
Water for injections

6.2 Incompatibilities

In the absence of compatibility studies, this medicinal product must not be mixed with other medicinal products.

6.3 Shelf life

42 months

6.4 Special precautions for storage

Store in a refrigerator (2°C – 8°C).
Do not freeze.

Stability data indicate that the vaccine components are stable at temperatures up to 25°C for 72 hours. At the end of this period, MenQuadfi should be used or discarded. These data are intended to guide healthcare professionals in case of temporary temperature excursion only.

6.5 Nature and contents of container

Solution in a Type I borosilicate clear glass vial with a 13 mm chlorobutyl stopper and a flip off seal. Pack of 1, 5 or 10 single dose (0.5 mL) vials.
Pack of 1 single dose (0.5 mL) vial co-packaged with 1 single use empty luer-lok syringe (polycarbonate) with a plunger-stopper (synthetic elastomer), and 2 separate needles (stainless steel) with needle-shield (polypropylene).

Not all pack sizes may be marketed.

6.6 Special precautions for disposal and other handling

The vaccine should be inspected visually for any particulate matter and/or variation of physical aspect (or discolouration) prior to administration. In the event of either being observed, discard the vaccine.

Preparation
Pack of 1, 5 or 10 single dose (0.5 mL) vials
Remove the vial flip off seal and using a suitable syringe and needle, withdraw 0.5 mL of solution from the vial, ensuring no air bubbles are present before injection.

Pack of 1 single dose (0.5 mL) vial co-packaged with 1 single use empty syringe and 2 needles
Specific instructions for luer-lok syringe:
To attach the needle to the syringe, gently twist the needle clockwise into the syringe until slight resistance is felt. Before injection, remove the vial flip off seal and withdraw 0.5 mL of solution from the vial, ensuring no air bubbles are present. A new needle should be used to administer the vaccine.

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

7. MARKETING AUTHORISATION HOLDER

Sanofi Pasteur
14 Espace Henry Vallée
69007 Lyon
France

8. MARKETING AUTHOURISATION NUMBER(S)

EU/1/20/1483/001
EU/1/20/1483/002
EU/1/20/1483/003
EU/1/20/1483/004

9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Date of first authorisation: 18 November 2020

10. DATE OF REVISION OF THE TEXT
ANNEX II

A. MANUFACTURER(S) OF THE BIOLOGICAL-active
SUBSTANCE(S) AND MANUFACTURER(S) RESPONSIBLE
FOR BATCH RELEASE

B. CONDITIONS OR RESTRICTIONS REGARDING SUPPLY
AND USE

C. OTHER CONDITIONS AND REQUIREMENTS OF THE
MARKETING AUTHORIZATION

D. CONDITIONS OR RESTRICTIONS WITH REGARD TO THE
SAFE AND EFFECTIVE USE OF THE MEDICINAL
PRODUCT
A. MANUFACTURER(S) OF THE BIOLOGICAL ACTIVE SUBSTANCE(S) AND MANUFACTURER(S) RESPONSIBLE FOR BATCH RELEASE

Name and address of the manufacturer(s) of the biological active substance(s)

Sanofi Pasteur Inc.
One Discovery Drive
Swiftwater PA 18370
United States

Name and address of the manufacturer(s) responsible for batch release

Sanofi Pasteur
Parc Industriel d’Incarville
27100 Val de Reuil
France

Sanofi-Aventis Zrt.
Building DC5
Campona utca 1.
Budapest, 1225
Hungary

The printed package leaflet of the medicinal product must state the name and address of the manufacturer responsible for the release of the concerned batch.

B. CONDITIONS OR RESTRICTIONS REGARDING SUPPLY AND USE

Medicinal product subject to medical prescription.

- Official batch release

In accordance with Article 114 of Directive 2001/83/EC, the official batch release will be undertaken by a state laboratory or a laboratory designated for that purpose.

C. OTHER CONDITIONS AND REQUIREMENTS OF THE MARKETING AUTHORISATION

- Periodic safety update reports (PSURs)

The requirements for submission of PSURs for this medicinal product are set out in the list of Union reference dates (EURD list) provided for under Article 107c(7) of Directive 2001/83/EC and any subsequent updates published on the European medicines web-portal.

The marketing authorisation holder (MAH) shall submit the first PSUR for this product within 6 months following authorisation.
D. CONDITIONS OR RESTRICTIONS WITH REGARD TO THE SAFE AND EFFECTIVE USE OF THE MEDICINAL PRODUCT

- **Risk management plan (RMP)**

  The marketing authorisation holder (MAH) shall perform the required pharmacovigilance activities and interventions detailed in the agreed RMP presented in Module 1.8.2 of the marketing authorisation and any agreed subsequent updates of the RMP.

  An updated RMP should be submitted:
  - At the request of the European Medicines Agency;
  - Whenever the risk management system is modified, especially as the result of new information being received that may lead to a significant change to the benefit/risk profile or as the result of an important (pharmacovigilance or risk minimisation) milestone being reached.

- **Obligation to conduct post-authorisation measures**

  The MAH shall complete, within the stated timeframe, the below measures:

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<tr>
<th>Description</th>
<th>Due date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study MET59: Immunogenicity and safety of a booster dose of an investigational quadrivalent MenACYW conjugate vaccine in adolescents and adults</td>
<td>Q2 2022</td>
</tr>
<tr>
<td>Study MEQ00066: Safety and immunogenicity of a single dose of MenACYW conjugate vaccine at least 3 years following initial vaccination with either Menomune® vaccine or MenACYW conjugate vaccine in Older Adults</td>
<td>Q1 2024</td>
</tr>
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ANNEX III

LABELLING AND PACKAGE LEAFLET
A. LABELLING
### PARTICULARS TO APPEAR ON THE OUTER PACKAGING

#### OUTER BOX

1. **NAME OF THE MEDICINAL PRODUCT**

   MenQuadfi, solution for injection
   Meningococcal group A, C, W and Y conjugate vaccine

2. **STATEMENT OF ACTIVE SUBSTANCE(S)**

   Each dose (0.5 mL) contains 10 micrograms of polysaccharide of each *Neisseria meningitidis* group: A, C, W and Y (conjugated to 55 micrograms tetanus toxoid carrier protein).

3. **LIST OF EXCIPIENTS**

   Excipients: sodium chloride, sodium acetate, water for injections

4. **PHARMACEUTICAL FORM AND CONTENTS**

   Solution for injection
   1 single dose vial (0.5 mL)
   5 single dose vials (0.5 mL)
   1 single dose vial (0.5 mL) + 1 syringe + 2 needles
   10 single dose vials (0.5 mL)

5. **METHOD AND ROUTE(S) OF ADMINISTRATION**

   Read the package leaflet before use.
   Intramuscular use.

6. **SPECIAL WARNING THAT THE MEDICINAL PRODUCT MUST BE STORED OUT OF THE SIGHT AND REACH OF CHILDREN**

   Keep out of the sight and reach of children.

7. **OTHER SPECIAL WARNING(S), IF NECESSARY**

8. **EXPIRY DATE**
9. **SPECIAL STORAGE CONDITIONS**

Store in a refrigerator.
Do not freeze.

10. **SPECIAL PRECAUTIONS FOR DISPOSAL OF UNUSED MEDICINAL PRODUCTS OR WASTE MATERIALS DERIVED FROM SUCH MEDICINAL PRODUCTS, IF APPROPRIATE**

11. **NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER**

Sanofi Pasteur
14 Espace Henry Vallée
69007 Lyon
France

12. **MARKETING AUTHORISATION NUMBER(S)**

EU/1/20/1483/001 - 1 single dose vial
EU/1/20/1483/002 - 5 single dose vials
EU/1/20/1483/003 - 1 single dose vial + 1 single use empty syringe + 2 needles
EU/1/20/1483/004 - 10 single dose vials

13. **BATCH NUMBER**

Lot

14. **GENERAL CLASSIFICATION FOR SUPPLY**

15. **INSTRUCTIONS ON USE**

16. **INFORMATION IN BRAILLE**

Justification for not including Braille accepted.

17. **UNIQUE IDENTIFIER – 2D BARCODE**
2D barcode carrying the unique identifier included.

18. UNIQUE IDENTIFIER - HUMAN READABLE DATA

PC:
SN:
NN:
### MINIMUM PARTICULARS TO APPEAR ON SMALL IMMEDIATE PACKAGING UNITS

**VIAL**

<table>
<thead>
<tr>
<th>Section</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td><strong>1. NAME OF THE MEDICINAL PRODUCT AND ROUTE(S) OF ADMINISTRATION</strong></td>
<td></td>
</tr>
<tr>
<td>MenQuadfi, solution for injection</td>
<td></td>
</tr>
<tr>
<td>Men A, C, W, Y conjugate</td>
<td></td>
</tr>
<tr>
<td>IM</td>
<td></td>
</tr>
<tr>
<td><strong>2. METHOD OF ADMINISTRATION</strong></td>
<td></td>
</tr>
<tr>
<td><strong>3. EXPIRY DATE</strong></td>
<td>EXP</td>
</tr>
<tr>
<td><strong>4. BATCH NUMBER</strong></td>
<td>Lot</td>
</tr>
<tr>
<td><strong>5. CONTENTS BY WEIGHT, BY VOLUME OR BY UNIT</strong></td>
<td>1 dose (0.5 mL)</td>
</tr>
<tr>
<td><strong>6. OTHER</strong></td>
<td>Sanofi Pasteur</td>
</tr>
</tbody>
</table>
B. PACKAGE LEAFLET
Package leaflet: Information for the user

MenQuadfi, solution for injection
Meningococcal group A, C, W and Y conjugate vaccine

This medicine is subject to additional monitoring. This will allow quick identification of new safety information. You can help by reporting any side effects you may get. See the end of section 4 for how to report side effects.

Read all of this leaflet carefully before you or your child are given this vaccine because it contains important information for you or your child.

- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask your doctor, pharmacist or nurse.
- This vaccine has been prescribed for you or your child only. Do not pass it on to others.
- If you or your child get any side effects, talk to your doctor, pharmacist, or nurse. This includes any possible side effects not listed in this leaflet. See section 4.

What is in this leaflet

1. What MenQuadfi is and what it is used for
2. What you need to know before you or your child are given MenQuadfi
3. How MenQuadfi is given
4. Possible side effects
5. How to store MenQuadfi
6. Contents of the pack and other information

1. What MenQuadfi is and what it is used for

What MenQuadfi is used for
MenQuadfi is a vaccine that can be given to children from 1 year of age, adolescents and adults.

MenQuadfi helps to protect against infections caused by a type of bacteria (germs) called “Neisseria meningitidis”, specifically against types A, C, W and Y.

*Neisseria meningitidis* bacteria (also called meningococci) can be passed from person to person and can cause serious and sometimes life-threatening infections, such as:
- Meningitis – an inflammation of the tissues that surround the brain and spinal cord;
- Septicaemia – an infection of the blood.

Both infections can result in serious disease with long lasting effects or possibly death.

MenQuadfi should be used in accordance with official national guidelines.

How the vaccine works
MenQuadfi works by stimulating the vaccinated person natural defense (immune system), to produce protective antibodies against the bacteria.

MenQuadfi only helps to protect against illnesses caused by *Neisseria meningitidis* types A, C, W and Y.
- It does not protect against infections caused by other types of *Neisseria meningitidis*.
- It does not protect against meningitis or septicaemia caused by other bacteria or viruses.
As with any vaccine, MenQuadfi may not fully protect all the people who are vaccinated.

2. **What you need to know before you are given MenQuadfi**

**Do not have MenQuadfi if you or your child**
- are allergic to any of the active substances or any of the other ingredients of this vaccine (listed in section 6) or have experienced a previous allergic reaction to this vaccine.

If you are not sure, talk to your doctor, pharmacist or nurse before you or your child are given MenQuadfi.

**Warnings and precautions**
Talk to your doctor, pharmacist or nurse before vaccination with MenQuadfi if you or your child have:
- an infection with high temperature (over 38°C). If this applies, the vaccination will be given after the infection is under control. There is no need to delay vaccination for a minor infection such as a cold. However, talk to your doctor, pharmacist or nurse first.
- a bleeding problem or bruise easily.
- ever fainted from an injection. Fainting, sometimes accompanied by falling, can occur (mostly in adolescents) after, or even before, any injection.
- a weak immune system (such as due to HIV infection, other disease, or use of a medicine that affect the immune system), as you or your child may not fully benefit from having MenQuadfi.

If any of the above apply to you or your child (or you are not sure whether they apply), talk to your doctor, pharmacist or nurse before you or your child are given MenQuadfi.

As with any vaccine, MenQuadfi may not fully protect all of those who get the vaccine.

**Other medicines and MenQuadfi**
Tell your doctor, pharmacist, or nurse if you or your child are taking, have recently taken or might take any other vaccines or medicines, including medicines obtained without a prescription.

In particular, tell your doctor, pharmacist, or nurse if you or your child are taking any medicines that affect your immune system, such as:
- high-dose corticosteroids
- chemotherapy

MenQuadfi may be given at the same time as other vaccines at separate injection site during the same visit. These include the vaccines that protect against measles, mumps, rubella, varicella, diphtheria, tetanus, pertussis, polio, *Haemophilus influenzae* type b, hepatitis B, pneumococcal and human papillomavirus infections.

**Pregnancy and breast-feeding**
If you are pregnant, breast-feeding, think you may be pregnant, or are planning to have a baby, ask your doctor, pharmacist, or nurse for advice before receiving MenQuadfi.

**Driving and using machines**
MenQuadfi is not likely to affect your ability to drive, cycle or use machines. However, do not drive, cycle or use any machines if you are not feeling well.
MenQuadfi contains sodium
This medicine contains less than 1 mmol sodium (23 mg) per dose, this means that it is essentially ‘sodium-free’.

3. How MenQuadfi is given

MenQuadfi is given by a doctor or nurse as a 0.5 ml injection in the muscle. It is given in the upper arm or in the thigh depending on the age and how much muscle you or your child have.

4. Possible side effects

Like all vaccines, MenQuadfi can cause side effects, although not everybody gets them.

If you or your child get any of these symptoms after the vaccination;
- itchy skin rash
- shortness of breath
- swelling of the face or tongue
Contact your doctor immediately. This could be signs of an allergic reaction.

Possible side effects in children aged 12 to 23 months:

Very common (may affect more than 1 in 10 children)
- tenderness, redness, or swelling where the injection was given
- feeling irritable
- crying
- loss of appetite
- feeling drowsy

Common (may affect up to 1 in 10 children)
- fever
- vomiting
- diarrhoea

Uncommon (may affect up to 1 in 100 people):
- difficulty sleeping
- hives
- itching, bruising, firmness, or rash where the injection was given

Possible side effects in children (2 years of age and older), adolescents and adults:

Very common (may affect more than 1 in 10 people)
- pain where the injection was given
- muscle pain
- headache
- generally feeling unwell
**Common** (may affect up to 1 in 10 people)
- redness or swelling where the injection was given
- fever

**Uncommon** (may affect up to 1 in 100 people)
- itching, warmth, bruising or rash where the injection was given
- vomiting
- feeling dizzy
- nausea
- fatigue (feeling tired)

**Rare** (may affect up to 1 in 1,000 people)
- enlarged lymph nodes
- diarrhoea, stomach pain
- hives, itching, rash
- pain in the arms or legs
- chills, pain in the armpit
- injection site firmness

**Reporting of side effects**
If you or your child get any side effects, talk to your doctor, pharmacist, or nurse. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via the national reporting system listed in Appendix V. By reporting side effects, you can help provide more information on the safety of this medicine.

5. **How to store MenQuadfi**

Keep this vaccine out of the sight and reach of children.

Do not use this vaccine after the expiry date which is stated on the carton after EXP.

Store in a refrigerator (2°C to 8°C).
Do not freeze.

Do not throw away any medicines via wastewater or household waste. Ask your pharmacist how to throw away medicines you no longer use. These measures will help to protect the environment.

6. **Contents of the pack and other information**

**What MenQuadfi contains**

**One dose (0.5 ml) contains:**

- The active substances are:
  - *Neisseria meningitidis* group A polysaccharide\(^1\) 10 micrograms
  - *Neisseria meningitidis* group C polysaccharide\(^1\) 10 micrograms
  - *Neisseria meningitidis* group Y polysaccharide\(^1\) 10 micrograms
  - *Neisseria meningitidis* group W polysaccharide\(^4\) 10 micrograms
- Conjugated to tetanus toxoid carrier protein 55 micrograms

- The other ingredients are
  - sodium chloride
  - sodium acetate
  - water for injections

What MenQuadfi looks like and contents of the pack
MenQuadfi is a clear colourless solution for injection.
MenQuadfi is available in packs of 1, 5 or 10 single dose (0.5 mL) vials and pack of 1 single dose vial (0.5 mL) co-packaged with 1 single use empty syringe and 2 needles. Not all pack sizes may be marketed.

Marketing Authorisation Holder and Manufacturer

Marketing Authorisation Holder
Sanofi Pasteur
14 Espace Henry Vallée
69007 Lyon
France

Manufacturer
Sanofi Pasteur
Parc Industriel d’Incarville
27100 Val de Reuil
France

Sanofi-Aventis Zrt.
Building DC5
Campona utca 1.
Budapest, 1225
Hungary

For any information about this medicine, please contact the local representative of the Marketing Authorisation Holder:

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>België/Belgique/Belgien</td>
<td>Sanofi Belgium tel.: +32 2 710.54.00</td>
</tr>
<tr>
<td>Lietuva</td>
<td>Swixx Biopharma UAB Tel.: +370 5 236 91 40</td>
</tr>
<tr>
<td>България</td>
<td>Swixx Biopharma EOOD Tел.: +359 (0)2 4942 480</td>
</tr>
<tr>
<td>Luxembourg/Luxemburg</td>
<td>Sanofi Belgium tel.: +32 2 710.54.00</td>
</tr>
<tr>
<td>Česká republika</td>
<td>Sanofi Pasteur divize. vakcín sanofi-aventis, s.r.o. Tel: +420 233 086 111</td>
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<tr>
<td>Magyarország</td>
<td>sanofi-aventis zrt Tel.: +36 1 505 0055</td>
</tr>
<tr>
<td>Danmark</td>
<td>Sanofi A/S Tel: +45 4516 7000</td>
</tr>
<tr>
<td>Malta</td>
<td>Sanofi S.r.l. Tel: +39 02 39394983</td>
</tr>
</tbody>
</table>
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United Kingdom (Northern Ireland)
sanofi-aventis Ireland Ltd. T/A SANOFI
Tel: +44 (0) 800 035 2525
This leaflet was last revised in {MM/YYYY}.

Other sources of information

Detailed information on this medicine is available on the European Medicines Agency web site: http://www.ema.europa.eu