EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

6 January 2021
EMA/15689/2021
Committee for Medicinal Products for Human Use (CHMP)

Assessment report

COVID-19 Vaccine Moderna

Common name: COVID-19 mRNA Vaccine (nucleoside-modified)

Procedure No. EMEA/H/C/005791/0000

Note

Assessment report as adopted by the CHMP with all information of a commercially confidential nature deleted.

Official address Domenico Scarlattilaan 6 ● 1083 HS Amsterdam ● The Netherlands
Address for visits and deliveries Refer to www.ema.europa.eu/how-to-find-us
Send us a question Go to www.ema.europa.eu/contact **Telephone** +31 (0)88 781 6000 An agency of the European Union

Compatibility

Compatibility testing that establishes the clinical in-use period for the finished product under refrigerated and ambient conditions was performed (see stability section). Materials of contact planned for clinical dosing (e.g., needles, syringes, vials) were used to determine material compatibility and clinical in-use stability. Hold times in the syringe of 0 and 8 hours were assessed under ambient conditions (room temperature) and 5°C with clinical material from early phase trials containing 0.1 mg/mL or 0.5 mg/mL mRNA concentration. Results showed no notable change to attributes of the finished product. Stability was demonstrated for clinical in-use for up to 8 hours at either ambient temperature or at 5°C.

Additional in-use studies were performed for the commercial dosage strength of 0.20 mg/mL. The product solution was held in the vial at room temperature for either 1 hour or 7 hours after thaw. Dosing syringes were prepared from the vial after 1 hour and then again after 7 hours upon completion of a 1-hour thaw at room temperature. The syringes were then held for 0, 4, 8, and 12 hours at room temperature and refrigerated conditions. Clinical in-use stability was demonstrated for dosage strengths of 0.20 mg/mL for 6 hours after first puncture in the vial followed by 8 hours in the syringe at either ambient temperature or at storage between 2°C to 8°C (see stability section).

Microbiological attributes

The finished product is manufactured by a conventional aseptic process using sterilising filtration. Prefiltration bioburden is monitored as part of the manufacturing process. The microbiological quality attributes are monitored by testing for sterility and endotoxins at release. Sterility is also monitored annually as part of the stability testing program. The microbiological suitability of the selected primary container closure system has been demonstrated through container closure integrity (CCI) testing studies. Results from container closure integrity testing demonstrate that the chosen container is suitable for storage and provides adequate protection.

The finished product does not include a preservative. As discussed above the lipid nanoparticle-based product is not compatible with common preservatives.

A microbial challenge hold time study, also known as growth promotion study was performed with a range of different microorganisms to assess the impact of low levels of microbial contamination from initial needle puncture/vial entry for the finished product. The level inoculum levels were representative of contamination that may occur in an in-use situation when multiple doses are withdrawn from the same vial. The results showed that growth of the inoculated microorganisms is hindered for up to 24 hours at 20°C – 25°C. Hence, the proposed 6 hours in-use period from initial needle puncture described in the product information is supported.

Manufacture of the product and process controls

mRNA-loaded LNP intermediate

Valid GMP certificates for the registered manufacturing sites have been provided.

The LNP manufacturing process comprises lipid stock solution (LSS) preparation, nanoprecipitation mixing, tangential flow filtration (TFF), dilution and cryoprotectant addition, clarification, fill, and freezing and storage.

The manufacturing process will be validated using a concurrent validation approach. This is acceptable in view of the pandemic and the data provided. Process validation and comparability data will have to be provided (**Specific obligation 2**). Upscaling of the manufacturing process should be included by variation post-authorisation.