Monophosphoryl Lipid A (MPLA-SM) VacciGrade™ is a pre-clinical grade TLR4 agonist derived from Lipid A, the immunostimulatory structure of lipopolysaccharide (LPS). This natural compound is extracted from the LPS of Salmonella minnesota Re595 (Re mutant). The preparation is a mix of MPLA congeneric forms differing in the number of acyl chains, and possibly responsible for the partial TLR4 agonist function of some preparations. MPLA-SM* results from an improved process of MPLA-SM extraction. While MPLA-SM* and MPLA-SM have the same ability to activate murine TLR4 (Figure 1), MPLA-SM* is more potent than MPLA-SM at inducing human TLR4 responses (Figure 2).

**Figure 1.** MPLA-SM and MPLA-SM* induce a similar dose-dependent response in HEK-Blue™ mTLR4 cells. The cells were incubated with increasing concentrations of two preparations of S. minnesota monophosphoryl lipid A, MPLA-SM and MPLA-SM*. After overnight incubation in HEK-Blue™ detection medium, a SEAP detection growth medium, the activation of mouse (m)TLR4 was assessed by determining the presence of SEAP in the supernatant. Data are expressed as optical density at 630 nm (±SEM).

**Figure 2.** MPLA-SM* is more potent than MPLA-SM at inducing a dose-dependent response in HEK-Blue™ hTLR4 cells. The cells were incubated with increasing concentrations of two preparations of S. minnesota monophosphoryl lipid A, MPLA-SM and MPLA-SM*. After overnight incubation in HEK-Blue™ detection medium, a SEAP detection growth medium, the activation of human (h)TLR4 was assessed by determining the presence of SEAP in the supernatant. Data are expressed as optical density at 630 nm (±SEM).