configured to subcutaneously administer the formulation to a subject at a rate of about 0.80 mL/sec to about 0.90 mL/sec. In one embodiment, the high volume autoinjector is configured to subcutaneously administer the formulation to a subject at a rate of about 0.90 mL/sec to about 1.00 mL/sec. In one embodiment, the high volume autoinjector is configured to subcutaneously administer the formulation to a subject with an applied force of about 10 N to about 200 N. In one embodiment, the high volume autoinjector is configured to subcutaneously administer the formulation to a subject with an applied force of about 10 N to about 45 N. In one embodiment, the high volume autoinjector is configured to subcutaneously administer the formulation to a subject with an applied force of about 25 N to about 50 N. In one embodiment, the high volume autoinjector is configured for self-administration of the formulation by the subject.

[0005a] In one aspect, the present disclosure refers to use of a hyaluronidase PH20 enzyme formulation comprising recombinant human hyaluronidase PH20 enzyme comprising a sequence having at least 95% amino acid sequence identity to an amino acid sequence selected from any of SEQ ID NO: 1 through 7 and SEQ ID NO: 15, and having an activity of about 500 U/mL to about 5,000 U/mL in the manufacture of a medicament for treating a disease by subcutaneous administration to a subject in need thereof, wherein the subcutaneous administration occurs at a volume of about 3 mL to about 50 mL and a rate of about 0.10 mL/sec to about 1.0 mL/sec.

[0005b] In another aspect, the present disclosure refers to use of a formulation comprising recombinant human hyaluronidase PH20 enzyme comprising a sequence having at least 95% amino acid sequence identity to an amino acid sequence selected from any of SEQ ID NO: 1 through 7 and SEQ ID NO: 15, and having an activity of about 500 U/mL to about 5,000 U/mL in the manufacture of a medicament for reducing one or more side effects of a high-volume subcutaneous injection in a subject in need thereof, wherein the high-volume subcutaneous administration occurs at a volume of about 3 mL to about 50 mL and a rate of about 0.10 mL/sec to about 1.0 mL/sec and the one or more side effects are selected from pain and discomfort at the injection site, back leakage at the injection site, swelling volume at the injection site, swelling height at the injection site, bleb swelling size, bleb induration, and bleb resolution time.

[0005c] In another aspect, the present disclosure refers to a pharmaceutical kit comprising a high volume injector and about 3 mL to about 50 mL of a formulation comprising recombinant human hyaluronidase PH20 enzyme comprising a sequence having at least 95% amino acid sequence identity to an amino acid sequence selected from any of SEQ ID NO: 1 through 7 and SEQ ID NO: 15, and having an activity of about 500 U/mL to about 5,000 U/mL, and an active ingredient selected from a

small molecule, a peptide, a nanoparticle, an antibody, an antibody fragment, and a small molecule antiviral.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] The following detailed description of embodiments of the hyaluronidase enzyme formulations for high volume administration, will be better understood when read in conjunction with the appended drawings of exemplary embodiments.

[0007] FIG. 1 is a chart of applied force (N) during injection (Mean ± SEM) of Ig-120 and Ig-120 + rHuPH20.

[0008] FIG. 2 is a chart of individual applied force (N) during injection of Ig-120 and Ig-120 + rHuPH20.

[0009] FIG. 3 is a chart of mean (± SEM) and individual weights of back-leakage.

[0010] FIG. 4 is a chart of individual swelling volumes (cm^3) after SC injection of Ig-120 and Ig-120 + rHuPH20 – caliper measurement.

[0011] FIG. 5 is a chart of individual swelling areas (cm^2) after SC injection of Ig-120 and Ig-120 + rHuPH20 – caliper measurement.

[0012] FIG. 6 is a chart of individual swelling heights (mm) after SC injection of Ig-120 and Ig-120 + rHuPH20 – caliper measurement.

[0013] FIGS. 7A-7B are composite 3D images of the minipigs by treatment. FIG. 7A: Composite images of minipigs treated with Ig-120. FIG. 7B: Composite 3D images of minipigs treated with Ig-120 + rHuPH20.

[0014] FIG. 8 is a chart of individual bleb volumes (cm^3) after SC injection of Ig-120 and Ig-120 + rHuPH20 – 3D imaging.