**DLS figures**

**Figure 1 – Sirt3 (118-399) sample 1**



**Figure 1:** Hydrodynamic radius distribution for Sirt3 (118-399). The vertical axis is the fraction of the total light scattering intensity. The horizontal axis is a logarithmically-spaced grid of hydrodynamic radius values (with adjacent points differing by a factor of ~1.3). The peaks for the two major radii distributions: 6.02 nm and 104 nm correspond to estimated molar masses of 220 kDa and 180 MDa, respectively.

**Figure 2 – Sirt3 (118-399) sample 2**

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**Figure 2:** Hydrodynamic radius distribution for Sirt3 (118-399). The vertical axis is the fraction of the total light scattering intensity. The horizontal axis is a logarithmically-spaced grid of hydrodynamic radius values (with adjacent points differing by a factor of ~1.3). The peaks for the three major radii distributions: 3.75 nm, 14.3 nm and 122 nm correspond to estimated molar masses of 74 kDa, 1.7 MDa and 260 MDa, respectively.

**Figure 3 – Sirt3 (102-399) – 2M urea**



**Figure 3:** Hydrodynamic radius distribution for Sirt3 (102-399). The vertical axis is the fraction of the total light scattering intensity. The horizontal axis is a logarithmically-spaced grid of hydrodynamic radius values (with adjacent points differing by a factor of ~1.3). The peaks for the two major radii distributions: 13.2 nm and 78.1 nm correspond to estimated molar masses of 1.4 MDa and 90 MDa, respectively.

**Figure 4 – Sirt3 (102-399) – Enzo Lifesciences**

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**Figure 4:** Hydrodynamic radius distribution for Sirt3 (102-399). The vertical axis is the fraction of the total light scattering intensity. The horizontal axis is a logarithmically-spaced grid of hydrodynamic radius values (with adjacent points differing by a factor of ~1.3). The peaks for the four major radii distributions: 5.51 nm, 33.6 nm, 444 nm and 27,700 nm correspond to estimated molar masses of 180 kDa, 13 MDa, 5.3 GDa and 8.4 TDa respectively.

**SEC figure – T-Sirt3 (118-399)**

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**Figure 1:** SEC profile of Sirt3 (118-399) in 0.1 M sodium phosphate, 0.2 M arginine, pH 6.8. Two main elution peaks were observed. The solid arrows indicate elution positions of lysozyme (14,300 Da) and BSA monomer (68,000 Da) and trimer (200,000 Da). Both elution peaks of T-Sirt3 were inconsistent with the molecular weight of the sample of 32,000 Da. The peak indicated by the open arrow approximately corresponds to the molecular weight of Sirt3 (118-399).