**Supplemental Table 9:** Virus-sized challenge experiment details used to determine impact of viruses on asteroids.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Expt #** | **Expt Start Date** | ***Species Challenged*** | **Species Collection Location** | **Collection Date** | **Inoculum Material species** | **Inoculum Material Collection Location** | **Tissue Type** | **Collection Date** | **Vol. Inoc (mL)** | **Method of inoculation** |
| 1 | 9/28/2015 | *Evasterias troscheli* | Dutch Harbor AK | 9/13/2015 | *Evasterias troscheli* | Whidbey Island  | Epidermis | 9/10/2015 | 2.5 | DI |
| 2 | 10/14/2015 | *Evasterias troscheli* | Dutch Harbor AK | 9/13/2015 | *Solaster stimpsonii1* | Dutch Harbor AK  | Ovaries | 9/13/2015 | 5 | DI |
| 3 | 11/15/2016 | *Pisaster ochraceus* | Whidbey Island | 5/23/2015 | *Pisaster ocraceus*  | Whidbey Island  | Ventral papillae | 2/9/2016 | 3 | DI |
| 4 | 11/26/2016 | *Pisaster brevispinus* | Whidbey Island | 5/23/2016 | *Pisaster ochraceus* | Whidbey Island2  | Body Wall + Pyloric Caeca | 5/23/2016 | 2 | DI |
| 5 | 1/16/2017 | *Pisaster brevispinus* | Whidbey Island | 5/23/2016 | *Pisaster ochraceus* | Olympic National Park  | Body Wall  | 1/3/2014 | n/a | Tissue implant |
| 6 | 12/4/2017 | *Asterias forbesii* | Casco Bay, Maine | 3/28/2017 | *Pisaster ocraceus* | Whidbey Island  | Body Wall + Pyloric Caeca | 2/9/2016 | 1.2 | DI |

DI = direct inoculation of filtered homogenate into coelomic cavity

1Material originated from *Solaster stimpsonii* which developed body wall lesions while in aquaria for ~ 1 month.

2Inoculum originated from individual that demonstrated SSWD signs in Expt #5