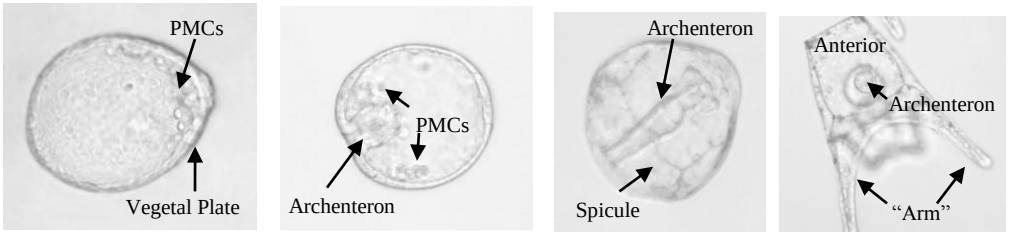
Figure1. Normal Sea Urchin Embryo Development



Blastula
Approx. 18-24h

Early Gastrula
24h

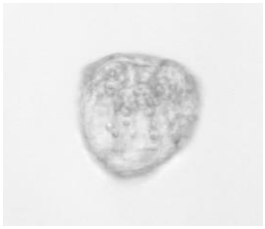
Gastrula/Early Prism
48h

Pluteus
72h

Figure 2 Effects of Thalidomide Treatment Observed at 48 Hours Development

Normal Control 48h

Abnormal archenteron, Abnormal spicules and poor prism morphology

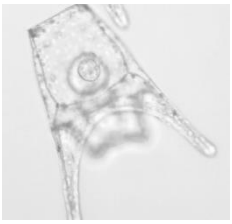


Incomplete archenteron formation

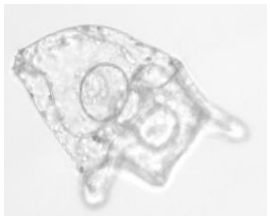
Abnormal archenteron, Abnormal spicules and poor prism morphology

.

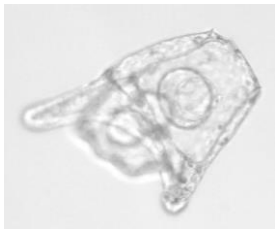
Figure 3. Effects of Thalidomide Treatment at 72 Hours Development



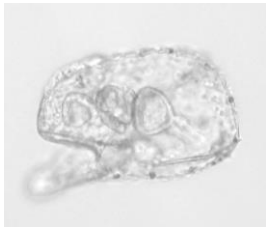
Normal control 72h



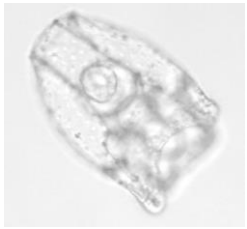
Abnormal width, pointed anterior and abnormal arm



Uneven arms



Abnormal archenteron and uneven arms



Shortened arms

Figure 4. Dose Response of *L. pictus* treated at initial culturing

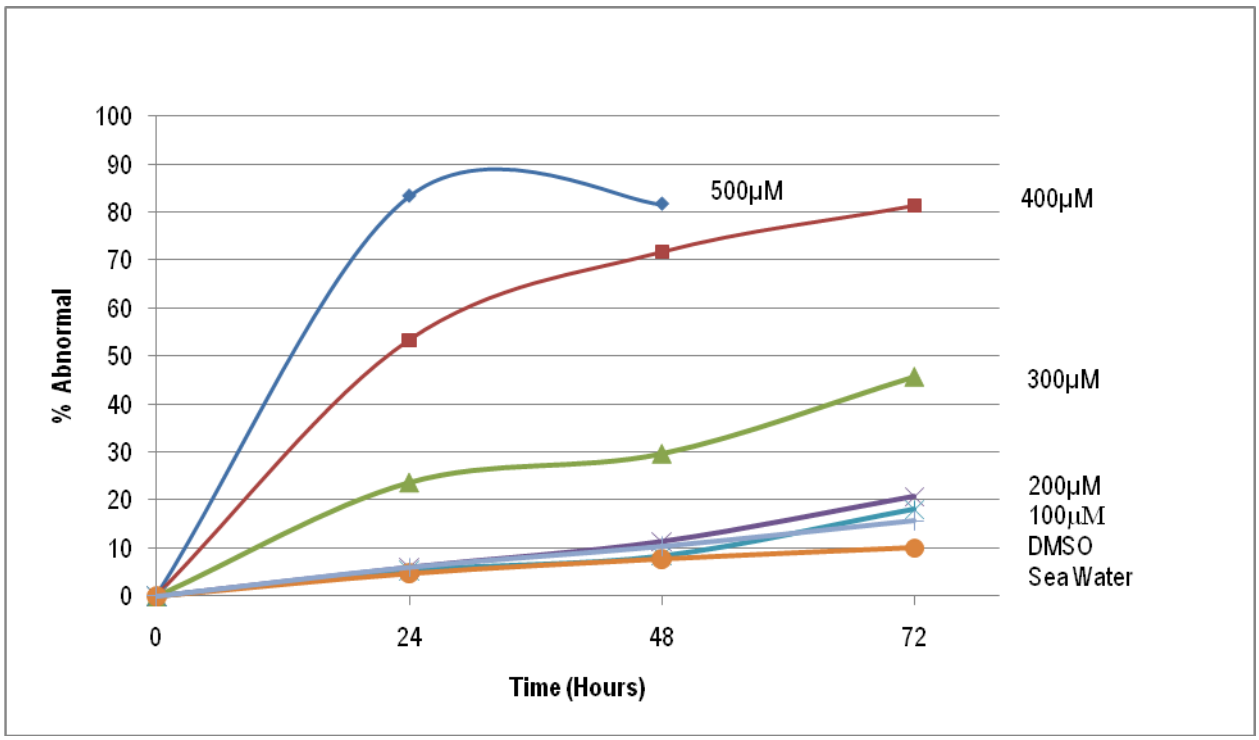


Figure 5. *L. pictus* Effect of Addition of Thalidomide Between 0 and 6 Hours Post-Fertilization

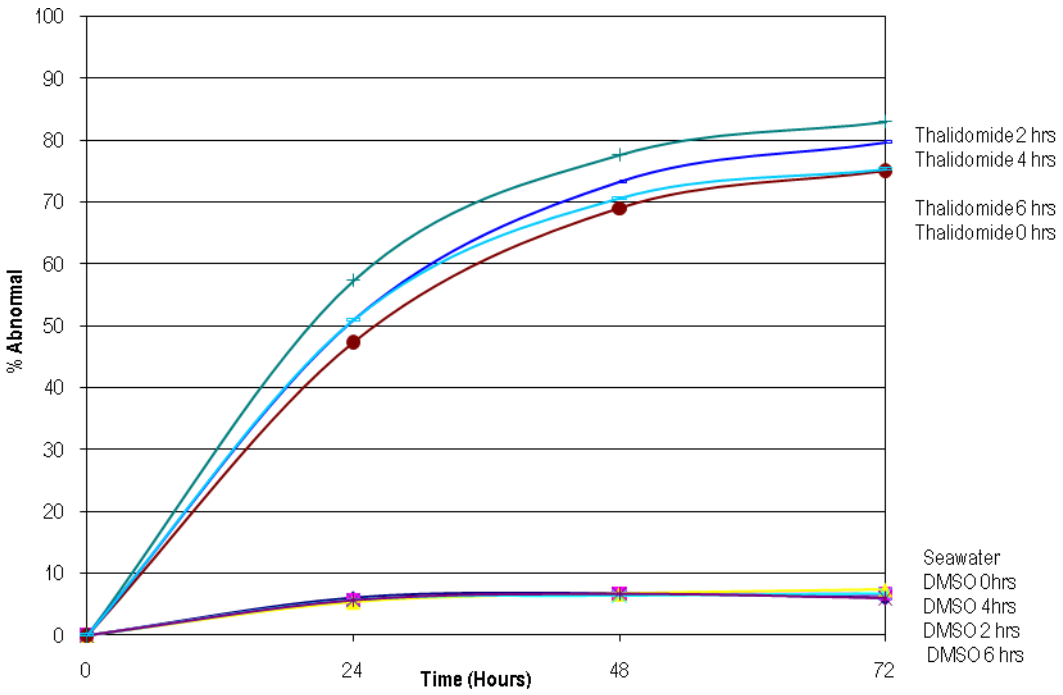


Figure 6. *L. pictus* Thalidomide Added Early in Development and Removed by 6 Hours

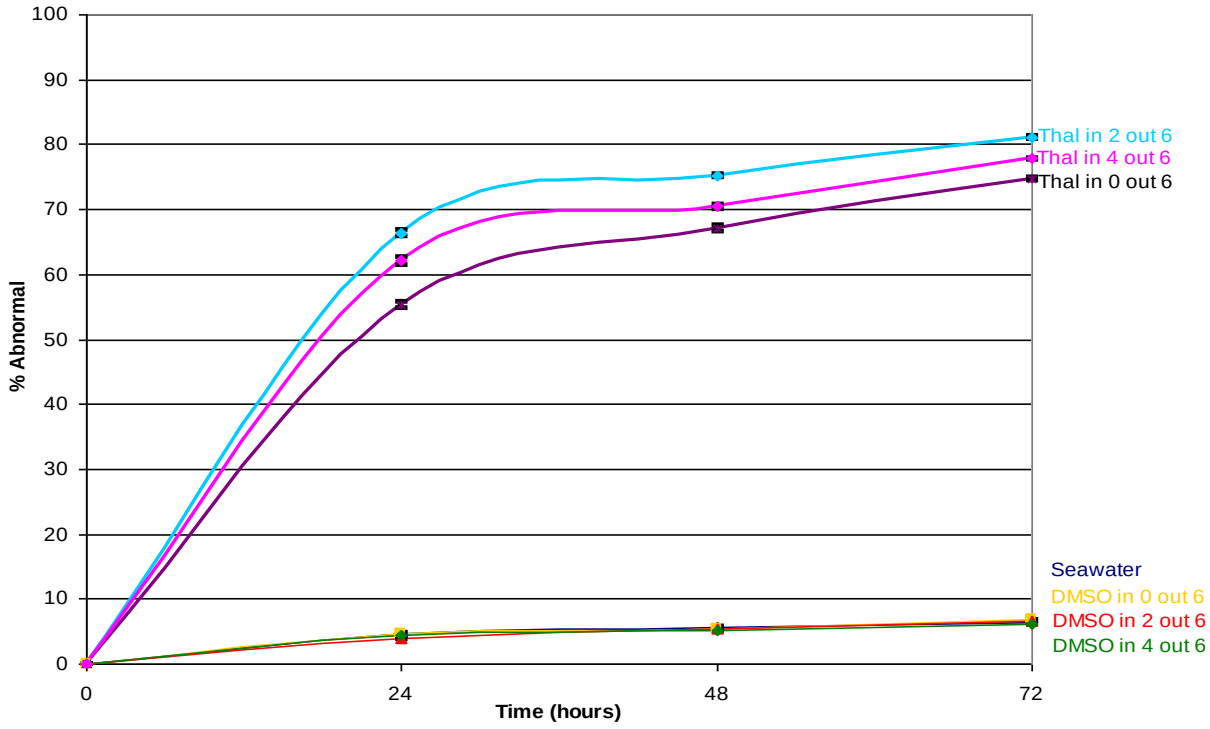


Figure 7. *S. purpuratus* Early Treatments Between 2 and 6 Hours Post Fertilization

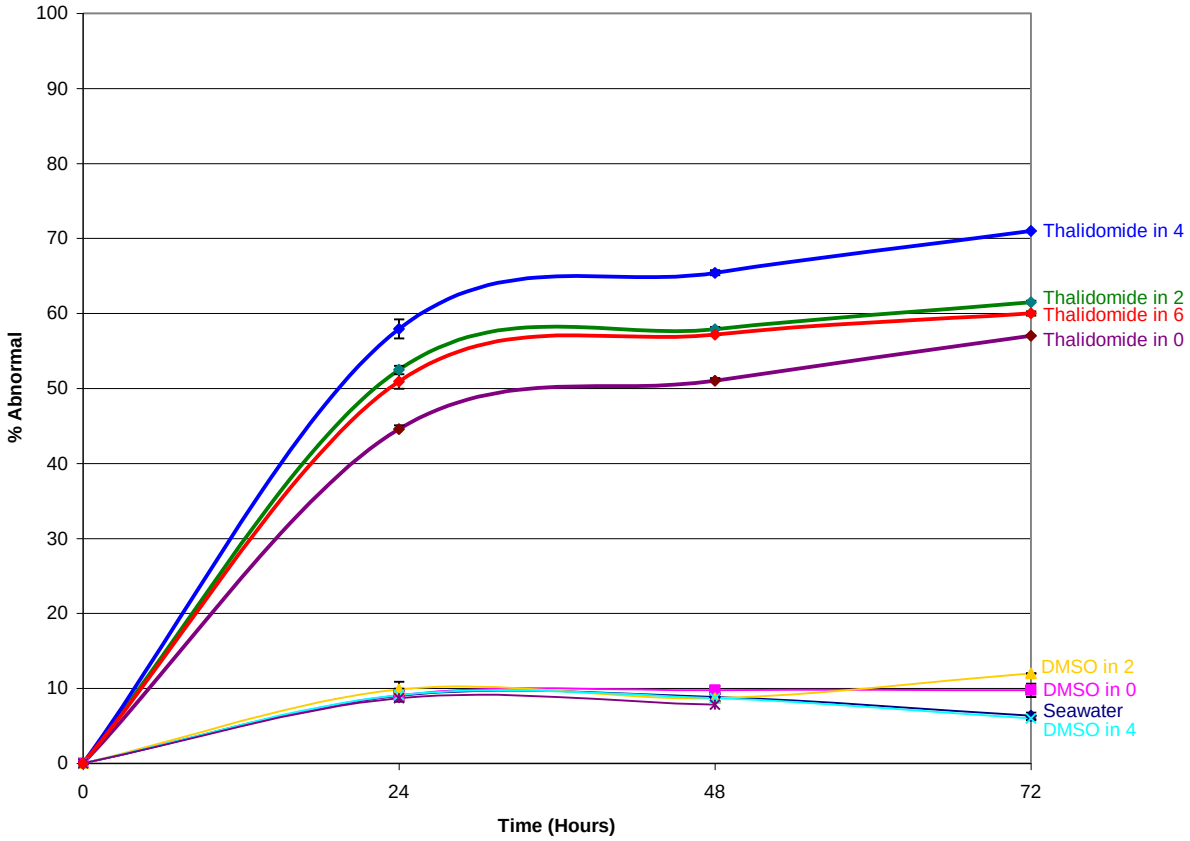


Table 1. Distribution of Abnormal Embryos in a Single Wash-Out Experiment with *L. pictus.*

			Thalidomide 0 hours	**Thalidomide 2 hours**	**Thalidomide 4 hours**
24h	**Physically Abnormal Embryos**		Mean%	Mean%	Mean%
		Exo-gastrulated	7.7	18.7	16.3
		Misshapen Vegetal Plate	17.7	26.7	24.3
		Total	25.4	45.4	40.6
	Abnormal Progress	Ahead in Development*	14.4	24.7	22.3
48h	**Physically Abnormal Embryos**	Exo-gastrulated	2.5	1.0	0
		Abnormal Archenteron	14.5	17.7	15.0
		Abnormal Anterior Angle	16.0	17.0	16.0
		One Arm	9.0	15.7	16.7
		Total	42.0	51.4	47.7
	Abnormal Progress	Still at Prism	15.0	8.7	7.33
72h	**Physically Abnormal Embryos**	Abnormal Archenteron	24.0	23.0	24.5
		One Arm	21.0	19.0	16.0
		Abnormal Anterior Angle	12.0	18.0	15.5
		Total	53.0	60.0	56.0
	Abnormal Progress	Still at Prism or Early Pluteus	13.0	20.0	13.50