Table S1. Models used to study the statistical differences between treatments across the different parameters and timepoints

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| Parameter | Time frame | Comparison | transformation | p-value | Model |
| Fv/Fm | (-7)-29 | WT@27C vs SS@27C | logaritmic | 0.6165 | lme(fvfm\_log~Treatment\*Culture\*Time,  random=~1|Tank/Subject,correlation=corCompSymm(form=~Time|Tank/Subject), data=PAMInshore\_Subject\_Full\_Plus\_Acclim\_nona |
| (-7)-29 | WT@31C vs SS@31C | logaritmic | 0.944 |
| (-7)-29 | WT@32.5C vs SS @32.5C | logaritmic | 0.0128 |
| (-7)-70 | WT@27C vs SS@27C | logaritmic | 0.8209 |
| (-7)-70 | WT@31C vs SS@31C | logaritmic | 0.0405 |
| 29-70 | WT@27C vs SS@27C | logaritmic | 0.998 |
| 29-70 | WT@31C vs SS@31C | logaritmic | <0.001 |
| 0 | WT@27C vs SS@27C | - | <2e-16 | lm(FvFm~Culture,data=PAMnonaWTSST027C) |
| (-7) | WTvsSS | - | 0.89 | lm(FvFm~Culture,data=PAMInshore\_Acclimatization\_nona) |
| Area (mm2) | 0 | WTvsSS | logaritmic | <2e-16 | **lm**(**Arealog**~Culture,data=AreaT0)` |
| % growth | 28 | WT@27C vs SS@27C | - | <2e-16 | **lm**(PropGroWTh~Culture,data=PropGroWThSR\_nona28at27C) |
| 28 | WT@31C vs SS@31C | - | 0.0139 | **lm**(PropGroWTh~Culture,data=PropGroWThSR\_nona28at31C) |
| 28 | WT@32.5C vs SS @32.5C | - | 0.165 | **lm**(PropGroWTh~Culture,data=PropGroWThSR\_nona28at32.5C) |
| 72 | WT@27C vs SS@27C | - | 0.458 | **lm**(PropGroWTh~Culture,data=PropGroWThSR\_nona72at27C) |
| 72 | WT@31C vs SS@31C | - | 0.0237 | **lm**(PropGroWTh~Culture,data=PropGroWThSR\_nona72at27C) |
| 28 | WT@27C vs WT@ 31C | - | 5.3e-07 | **lm**(PropGroWTh~Temperature,data=PropGroWThSR\_nonaWTat27C31C) |
| 28 | WT@27C vs WT@ 32.5C | - | 2.9e-12 | **lm**(PropGroWTh~Temperature,data=PropGroWThSR\_nonaWTat27C32.5C) |
| 28 | WT@31C vs WT@ 32.5C | - | 0.120162 | **lm**(PropGroWTh~Temperature,data=PropGroWThSR\_nonaWTat31C32.5C) |
| 28 | SS@27C vs SS@ 31C | - | 0.250 | lm(PropGroWTh~Temperature,data=PropGroWThSR\_nonaSSt28at27C31C) |
| 28 | SS@27C vs SS@ 32.5C |  | 0.000183 | lm(PropGroWTh~Temperature,data=PropGroWThSR\_nonaSSt28at27C32.5C) |
| 28 | SS@31C vs SS@ 32.5C | - | 0.012 | lm(PropGroWTh~Temperature,data=PropGroWThSR\_nonaSSt28at31C32.5C) |
| Number of polyps | 0-28 | WT@27C vs SS@27C | - | 2.05e-06 | **glmer**(Polyps~Temperature\*Culture\*Day+(1|TankNumb/RecruitID2), data=groWThSR\_noNA, family="poisson") |
| 0-28 | WT@31C vs SS@31C | - | 0.0558 |
| 0-28 | WT@32.5C vs [SS@32.5C](mailto:31mix@32.5C) | - | 0.0886 |
| 0-70 | WT@27C vs SS@27C | - | 1.44e-07 |
| 0-70 | WT@31C vs SS@31C | - | 0.00492 |
| 0 | SS vs WT | Square root | 2.64e-06 | lm(sqrt(growthSR\_noNAT0$Polyps)~Culture,data=growthSR\_noNAT0) |
| 0 | SS@27C vs WT@27C | Square root | 9.34e-06 | lm(sqrt(growthSR\_noNAT027C$Polyps)~Culture,data=growthSR\_noNAT027C) |
| % in change in numb of polyps | 28 | SS@27C vs WT@27C | log10(Y + 1 - min(Y)) | 0.02835 | glm(Log10PropGrowthPolypsTranslate~Culture, family='poisson', data=PropGrowthPolypsSR\_nona28at27C) |
| 28 | SS @31C vs WT@31C | log10(Y + 1 - min(Y)) | 0.905 | glm(Log10PropGrowthPolypsTranslate~Culture, family='poisson', data=PropGrowthPolypsSR\_nona28at31C) |
| 28 | SS @32C vs WT@32C | log10(Y + 1 - min(Y)) | 0.86693 | glm(Log10PropGrowthPolypsTranslate~Culture, family='poisson', data=PropGrowthPolypsSR\_nona28at32.5C) |
| 72 | SS @27C vs WT@27C | log10(Y + 1 - min(Y)) | 0.00431 | glm(Log10PropGrowthPolypsTranslate~Culture, family='poisson', data=PropGrowthPolypsSR\_nona72at27C) |
| 72 | SS @31C vs WT@31 | log10(Y + 1 - min(Y)) | 0.2715 | glm(Log10PropGrowthPolypsTranslate~Culture, family='poisson', data=PropGrowthPolypsSR\_nona72at31C) |
| Cells/mm2 | 0-28 | WT@27C vs SS@27C | logaritmic | 0.225 | **lme**(CellsPerMM2\_log~Temperature\*Culture\*Time, random=~1|Tank, data=CellInshore\_tank\_nona) |
| 0-28 | WT@31C vs SS@31C | logaritmic | 0.459 |
| 0-28 | WT@32.5C vs [SS@32.5C](mailto:31mix@32.5C) | logaritmic | 0.830 |
| 0-70 | WT@27C vs SS@27C | logaritmic | 0.657 |
| 0-70 | WT@31C vs SS@31 | logaritmic | 0.215 |
| 0 | SS vs WT | logaritmic | 1.35e-05 | lm(log(CellsPerMM2)~Culture,data=CellInshore\_tank\_nonaT0) |
| 0 | SS@27C vs WT@27C | logaritmic | 0.00228 | lm(log(CellsPerMM2)~Culture,data=CellInshore\_tank\_nonaT027C) |
| 0 | SS@31C vs WT@31C | logaritmic | 0.297 | lm(log(CellsPerMM2)~Culture,data=CellInshore\_tank\_nonaT031C) |
| 0 | SS@32.5C vs WT@32.5C | logaritmic | 0.000127 | lm(log(CellsPerMM2)~Culture,data=CellInshore\_tank\_nonaT032.5C) |
| 28 | SS@27C vs WT@27C | logaritmic | 0.933 | lm(log(CellsPerMM2)~Culture,data=CellInshore\_tank\_nonaT2827C) |
| 28 | SS@31C vs WT@31C | logaritmic | 0.021 | lm(log(CellsPerMM2)~Culture,data=CellInshore\_tank\_nonaT2831C) |
| 28 | SS@32.5C vs WT@32.5C | logaritmic | 0.000985 | lm(log(CellsPerMM2)~Culture,data=CellInshore\_tank\_nonaT2832.5C) |
| 72 | SS@27C vs WT@27C | logaritmic | 0.299 | lm(log(CellsPerMM2)~Culture,data=CellInshore\_tank\_nonaT7027C) |
| 72 | SS@31C vs WT@31C | logaritmic | 0.137 | lm(log(CellsPerMM2)~Culture,data=CellInshore\_tank\_nonaT7031C) |
| % Change Cells/mm2 | 28 | WT@27C vs SS@27C | - | 0.00356 \*\* | CellInshore\_tank\_nonaMinusT0\_31CT28.lm1=lm(PropCellsPerMM2~Culture,data=CellInshore\_tank\_nonaMinusT0\_31CT28) |
| 28 | WT@31C vs SS@31C | - | 0.208 | CellInshore\_tank\_nonaMinusT0\_31CT28.lm1=lm(PropCellsPerMM2~Culture,data=CellInshore\_tank\_nonaMinusT0\_31CT28) |
| 28 | WT@32.5C vs [SS@32.5C](mailto:31mix@32.5C) | log10(Y + 1 - min(Y)) | 0.00533 | CellInshore\_tank\_nonaMinusT0\_32.5CT28.glm1=glm(log10PropCellsPerMM2Translate~Culture, family='poisson', data=CellInshore\_tank\_nonaMinusT0\_32.5CT28) |
| 72 | WT@27C vs SS@27C | - | 8.29e-05 | CellInshore\_tank\_nonaMinusT0\_27CT70.lm1=lm(PropCellsPerMM2~Culture,data=CellInshore\_tank\_nonaMinusT0\_27CT70) |
| 72 | WT@31C vs SS@31 | - | 0.477 | CellInshore\_tank\_nonaMinusT0\_31CT70.lm1=lm(PropCellsPerMM2~Culture,data=CellInshore\_tank\_nonaMinusT0\_31CT70) |
| Mortality | 0-70 | 27.SS - 27.WT | ? | 0.9643 | **survreg**(Surv(finalday, status)~-1+SHD, data=mort2, dist="weibull") |
| 0-70 | 31.SS - 31.WT | ? | 0.0782 | **survreg**(Surv(finalday, status)~-1+SHD, data=mort2, dist="weibull") |
| 0-28 | 32.5.SS - 32.5.WT | ? | 1.0000 | **survreg**(Surv(finalday, status)~-1+SHD, data=mort2, dist="weibull") |
| 28 | SS@27C vs WT@27C | - | 0.00105 | lm(Mortality~Culture,data=Mortality28at27C) |
| 28 | SS@31C vs WT@31C | - | 0.136 | glm(Mortality~Culture,data=Mortality28at31C,family='poisson') |
| 28 | SS@32.5C vs WT@32.5C | - | 0.706 | glm(Mortality~Culture,data=Mortality28at32.5C,family='poisson') |
| 72 | SS@27C vs WT@27C | - | 0.5169 | lm(Mortality~Culture,data=Mortality72at27C) |
| 72 | SS@31C vs WT@31C | - | 0.3133 | lm(Mortality~Culture,data=Mortality72at31C) |
| survivorship | 28 | SS@27C vs WT@27C |  | 0.001051 | Survivorship28at27C.lm1=lm(Survivorship~Culture,data=Survivorship28at27C) |
|  | 28 | SS@31C vs WT@31C |  | 0.275 | Survivorship28at31C.lm1=lm(Survivorship~Culture,data=Survivorship28at31C) |
|  | 28 | SS@32.5C vs WT@32.5C |  | 0.819 | Survivorship28at31C.lm1=lm(Survivorship~Culture,data=Survivorship28at31C) |
|  | 72 | SS@27C vs WT@27C |  | 0.516 | Survivorship72at27C.glm1=lm(Survivorship~Culture,data=Survivorship72at27C) |
|  | 72 | SS@31C vs WT@31C |  | 0.3133 | Survivorship72at31C.lm1=lm(Survivorship~Culture,data=Survivorship72at31C) |
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