**Correlation Test and Regression Output**

**CONTROL GENES:**

**NFKB1:**

For gene NFKB1, correlation: 0.7183131175438129, p-value: 0.0001132833917904402

For gene NFKB1, regression:

OLS Regression Results

==============================================================================

Dep. Variable: y R-squared: 0.516

Model: OLS Adj. R-squared: 0.493

Method: Least Squares F-statistic: 22.39

Date: Mon, 31 Jul 2023 Prob (F-statistic): 0.000113

Time: 14:49:55 Log-Likelihood: -13.955

No. Observations: 23 AIC: 31.91

Df Residuals: 21 BIC: 34.18

Df Model: 1

Covariance Type: nonrobust

==============================================================================

coef std err t P>|t| [0.025 0.975]

------------------------------------------------------------------------------

const 0.0882 0.097 0.910 0.373 -0.113 0.290

x1 0.5411 0.114 4.731 0.000 0.303 0.779

==============================================================================

Omnibus: 4.949 Durbin-Watson: 2.784

Prob(Omnibus): 0.084 Jarque-Bera (JB): 3.470

Skew: 0.944 Prob(JB): 0.176

Kurtosis: 3.241 Cond. No. 1.18

**SRR:**

For gene SRR, correlation: 0.7420128271376372, p-value: 5.0552369793808564e-05

For gene SRR, regression:

OLS Regression Results

==============================================================================

Dep. Variable: y R-squared: 0.551

Model: OLS Adj. R-squared: 0.529

Method: Least Squares F-statistic: 25.73

Date: Mon, 31 Jul 2023 Prob (F-statistic): 5.06e-05

Time: 14:49:55 Log-Likelihood: -16.534

No. Observations: 23 AIC: 37.07

Df Residuals: 21 BIC: 39.34

Df Model: 1

Covariance Type: nonrobust

==============================================================================

coef std err t P>|t| [0.025 0.975]

------------------------------------------------------------------------------

const -0.0909 0.108 -0.838 0.411 -0.316 0.135

x1 0.6489 0.128 5.072 0.000 0.383 0.915

==============================================================================

Omnibus: 0.274 Durbin-Watson: 2.770

Prob(Omnibus): 0.872 Jarque-Bera (JB): 0.002

Skew: -0.013 Prob(JB): 0.999

Kurtosis: 2.961 Cond. No. 1.18

**PDE4B:**

For gene PDE4B, correlation: 0.669794052904389, p-value: 0.00047210342397071344

For gene PDE4B, regression:

OLS Regression Results

==============================================================================

Dep. Variable: y R-squared: 0.449

Model: OLS Adj. R-squared: 0.422

Method: Least Squares F-statistic: 17.09

Date: Mon, 31 Jul 2023 Prob (F-statistic): 0.000472

Time: 14:49:55 Log-Likelihood: -23.879

No. Observations: 23 AIC: 51.76

Df Residuals: 21 BIC: 54.03

Df Model: 1

Covariance Type: nonrobust

==============================================================================

coef std err t P>|t| [0.025 0.975]

------------------------------------------------------------------------------

const 0.0676 0.149 0.453 0.655 -0.243 0.378

x1 0.7278 0.176 4.134 0.000 0.362 1.094

==============================================================================

Omnibus: 0.302 Durbin-Watson: 2.122

Prob(Omnibus): 0.860 Jarque-Bera (JB): 0.474

Skew: 0.072 Prob(JB): 0.789

Kurtosis: 2.312 Cond. No. 1.18

==============================================================================

**SIGNIFICANT GENES:**

**SFRP4**

For gene SFRP4, correlation: 0.4094344827748153, p-value: 0.052367675467363956

For gene SFRP4, regression:

OLS Regression Results

==============================================================================

Dep. Variable: y R-squared: 0.168

Model: OLS Adj. R-squared: 0.128

Method: Least Squares F-statistic: 4.229

Date: Mon, 31 Jul 2023 Prob (F-statistic): 0.0524

Time: 14:41:40 Log-Likelihood: -36.004

No. Observations: 23 AIC: 76.01

Df Residuals: 21 BIC: 78.28

Df Model: 1

Covariance Type: nonrobust

==============================================================================

coef std err t P>|t| [0.025 0.975]

------------------------------------------------------------------------------

const 0.8100 0.253 3.204 0.004 0.284 1.336

x1 0.6135 0.298 2.057 0.052 -0.007 1.234

==============================================================================

Omnibus: 0.381 Durbin-Watson: 1.914

Prob(Omnibus): 0.827 Jarque-Bera (JB): 0.471

Skew: 0.257 Prob(JB): 0.790

Kurtosis: 2.524 Cond. No. 1.18

==============================================================================

**SLC2A2 (GLUT2)**

For gene SLC2A2, correlation: 0.27904216830313977, p-value: 0.1972578450427085

For gene SLC2A2, regression:

OLS Regression Results

==============================================================================

Dep. Variable: y R-squared: 0.078

Model: OLS Adj. R-squared: 0.034

Method: Least Squares F-statistic: 1.773

Date: Mon, 31 Jul 2023 Prob (F-statistic): 0.197

Time: 14:41:40 Log-Likelihood: -39.140

No. Observations: 23 AIC: 82.28

Df Residuals: 21 BIC: 84.55

Df Model: 1

Covariance Type: nonrobust

==============================================================================

coef std err t P>|t| [0.025 0.975]

------------------------------------------------------------------------------

const -0.5773 0.290 -1.993 0.059 -1.180 0.025

x1 0.4552 0.342 1.332 0.197 -0.256 1.166

==============================================================================

Omnibus: 4.780 Durbin-Watson: 0.936

Prob(Omnibus): 0.092 Jarque-Bera (JB): 3.249

Skew: -0.909 Prob(JB): 0.197

Kurtosis: 3.291 Cond. No. 1.18

==============================================================================

**IGF1R**

For gene IGF1R, correlation: 0.613960237796119, p-value: 0.0018314738086576687

For gene IGF1R, regression:

OLS Regression Results

==============================================================================

Dep. Variable: y R-squared: 0.377

Model: OLS Adj. R-squared: 0.347

Method: Least Squares F-statistic: 12.71

Date: Mon, 31 Jul 2023 Prob (F-statistic): 0.00183

Time: 14:41:40 Log-Likelihood: -23.421

No. Observations: 23 AIC: 50.84

Df Residuals: 21 BIC: 53.11

Df Model: 1

Covariance Type: nonrobust

==============================================================================

coef std err t P>|t| [0.025 0.975]

------------------------------------------------------------------------------

const -0.2801 0.146 -1.915 0.069 -0.584 0.024

x1 0.6152 0.173 3.564 0.002 0.256 0.974

==============================================================================

Omnibus: 2.199 Durbin-Watson: 1.528

Prob(Omnibus): 0.333 Jarque-Bera (JB): 1.447

Skew: 0.614 Prob(JB): 0.485

Kurtosis: 2.941 Cond. No. 1.18

==============================================================================