Propuesta de Trabajo Fin de Máster
Año académico 2021-2022
MÁSTER EN MÉTODOS COMPUTACIONALES EN CIENCIAS

Project Nº 23 ASIGNADO

Título: Deciphering Alternative Splicing and DNA Methylation Association in Head and Neck Squamous Carcinoma

Departamento/ Laboratorio: Computational Biology Tecnun

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Resumen

Alternative Splicing (AS) is known to play key role in cancer development, progression and metastasis. Recent studies revealed that around 20% of AS events are directly regulated by DNA methylation (DNAm), which opened a novel line of research to identify biomarkers of diagnosis, prognosis, and treatment in cancer patients. In this work, we previously analyzed the influence of DNAm in splicing patterns of 528 Head and Neck Squamous Carcinoma (HNSCC) patients of TCGA. DNAm and splicing are strongly co-ocurrent in more than 800 splicing events (~35%). Interestingly, we noticed that CpG sites that modulate splicing have a strong relationship with patient survival, even larger than CpG sites related to changes in gene expression.

Within this context, the MSc Student will have to re-run the pipeline using a newer version of splicing software analyzer; check the coherence of the results, and find an *in-silico* pipeline to infer a possible biological association between AS and DNAm, in terms of regulation. Results of this project will be added to the already written manuscript and published.

OPTATIVAS RECOMENDADAS

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