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NRF2 molecule of the month

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NRF2 – nuclear factor erythroid 2-related factor 2 is also known as GA binding protein transcription factor, alpha subunit 60kDa- GABPA **[1, 2].** A recent literature review suggests that NRF2 has complex regulatory roles in cancer. NRF2 is a transcription factor and is upregulated by oncogenes. NRF2 is an antioxidant master regulator and for example, binds to ARE –antioxidant response element. NFR2 lowers ROS (in pancreatic and lung cancers). However, NRF2 silences miR200a (a miRNA) (in breast cancer) that leads to additional expression of its repressor, KEAP1. Therapies are under investigation **[1].**

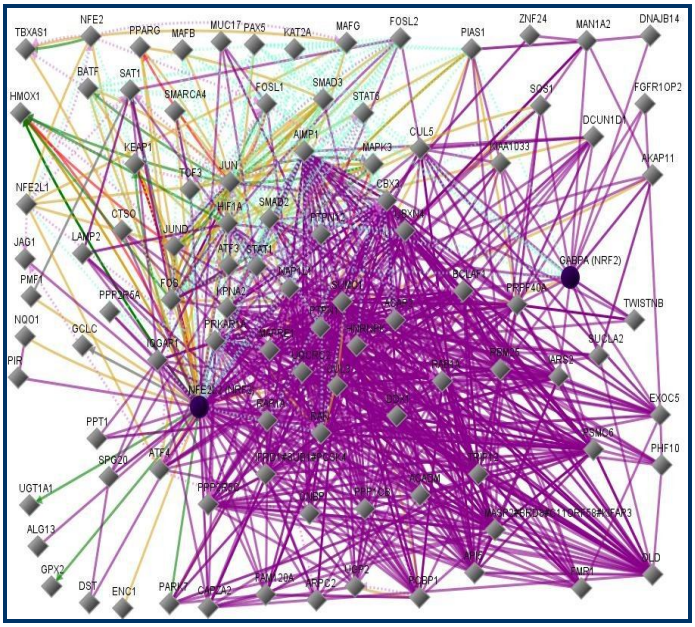

Figure 1: NRF2and related interactions with up to 100 neighbors. In this figure, line-colors and various interactions with other genes are red Down-regulation, green Up-regulation, beige Regulation, purple Co-expression, brown Physical Interaction, turquoise dotted Predicted Protein Interaction, and mauve dotted Predicted TFactor Regulation. (GenePro SA Biosciences, http://www.sabiosciences.com/).

The two figures illustrate various gene interactions, up to 100 for each figure. **Figure 1** shows interactions for NRF2 and GABPA that the database treats as similar. **Figure 2** shows interactions and neighboring genes among NRF2-GABPA, KEAP1, NFE2L2, ROS, miR200a, COPD, and MS.

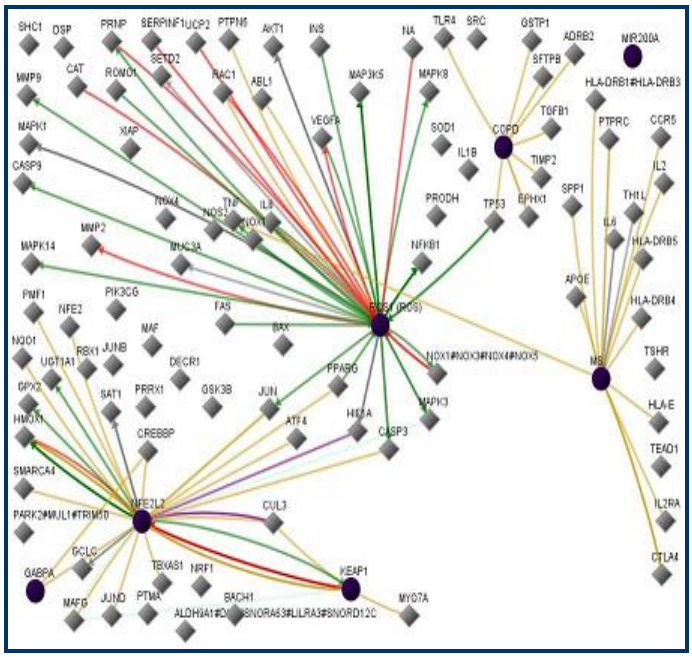

Figure 2: NRF2 and related interactionswith NRF2, GABPA, NFE2L2, KEAP1, ROS, miR200a, COPD, MS input) and up to 100 neighbors.In this figure, line-colors and various interactions with other genes are red Down-regulation, green Up-regulation,

beige Regulation, purple Co-expression, brown Physical Interaction, turquoise dotted Predicted Protein Interaction, and mauve dotted Predicted TFactor Regulation. (GenePro SA Biosciences, http://www.sabiosciences.com/).

It is left as a puzzle for the interested reader to identify the various genes and their functionsin the figures **[3, 4].**

Acknowledgment:
There are no financial conflicts.

References:

[1] http://www.sabiosciences.com/pathwaymagazine/minireview/oxidativestress.php?utm_content=PR120906+Oxidative+Stress+Review_us&utm_campaign=PR120906+Oxidative+Stress&utm_source=iPost&utm_medium=email
[2] http://www.genecards.org/cgi-bin/carddisp.pl?gene=GABPA&search=NRF2+
[3] http://www.sabiosciences.com/
[4] http://www.genecards.org/

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