

[S-5]**Transcription factor NF- κ B as a potential biomarker of oxidative stress to evaluate antioxidant effects**

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There is increasing interest in the involvement of transcription factors, such as of the transcription factor NF- κ B (nuclear factor- κ B), in the pathogenesis of various diseases. The involvement of NF- κ B is especially of interest as it is activated by oxidative stress and its activation can be modulated by antioxidant compounds.

NF- κ B is involved in the control of the transcription of a variety of cellular genes that regulate the inflammatory response by the production of cytokines, chemokines, cell adhesion molecules and acute phase proteins.

The activation of NF- κ B can be determined by the electromobility shift assay (EMSA) or by an ELISA-based assay with NF- κ B bindingsite-specific probes. These methods can also be used on human mononuclear cells isolated from peripheral blood, which could make the assay applicable for clinical trials^{1,2,3,4}.

Our hypothesis is that NF- κ B in combination with the classical risk factors for CHD which are (co-)regulated by NF- κ B, such as CRP, ICAM and interleukins, might be a indicative set of biomarkers to evaluate an antioxidant effect in CHD risk. Studies performed to support this hypothesis will be presented.

- 1 Van den Berg R, Haenen GRRM, Van den Berg H, Bast A (2001) Transcription factor NF-B as a potential biomarker for oxidative stress. *British Journal of Nutrition* 86: S121-S127.
- 2 Drent M, Van den Berg R, Haenen GRMM, Van den Berg H, Wouters EFM, Bast A

- (2001) NF-B activation in sarcoidosis. *Sarcoidosis Vasculitis and Diffuse Lung disease*. 18: 50-56.
- 3 Van den Berg R, Haenen GRRM, Van den Berg H, Bast A (2001) Nuclear factor-B activation is higher in peripheral blood mononuclear cells of male Smokers. *Environmental Toxicology and Pharmacology* 9: 147-151.
 - 4 Van den Berg, van Vliet T, Broekmans WMR, Cnubben NHP, Vaes WHJ, Haenen GRRM, Bast A, Roza L, Van den Berg H (2001) A vegetable/fruit concentrate with a high antioxidant capacity has no effect of on biomarkers of antioxidant status in smokers. *Journal of Nutrition* 131: 1714-1722.