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Nyaditum resae®, a new immunomodulatory compound to prevent and treat active tuberculosis (TB).

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Background: An exacerbated inflammation has been recently pointed out as a key factor in active tuberculosis (TB) development, highlighting the role of neutrophiles and pro-inflammatory cytokines in a mouse model of active TB. In this model, NSAIDs proved to control the disease by modulating the antiinflammatory activity. A further step has been taken, a new therapeutic strategy being developed through the induction of tolerance to Mtb.

M&M: The Cardona's murine model of active TB was used¹. C3HeB/FeJ Mice were infected intravenously (IV) with *M.tuberculosis* (Mtb) H37Rv Pasteur strain and tolerance to Mtb was induced through administration of heat-killed mycobacteria at low doses. Different dose regimens, administration schedules and mycobacteria species were tested. The effect on mice survival, Bacillary Load (BL), histology and T-cell populations by flow cytometry were studied.

Results: Heat-killed *M.tuberculosis* (Mtb), BCG, *M.kansasii* and *M.fortuitum* increased the survival of Mtb-infected animals when administered ly and generated a better outcome in terms of BL and histopathology. Regulatory T cells in blood, lung and spleen showed an immunomodulatory effect of the treatment. Best results were achieved by the daily administration of heat-killed *M.fortuitum manresae* (Nyaditum resae®) during two weeks in a prophylactic and therapeutic manner.

Conclusions: A new tool to control active pulmonary TB through immunomodulation has been patented and developed. Given its intrinsic features and safety profile a clinical trial has been launched and the product will be available as food supplement in the market in late 2014.

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References: ¹ PMID: 24291066