

## **Biochemical description and classification of TB granulomas**

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Tuberculosis (TB) has proven to be a persistent disease, especially in sub-Saharan Africa. It is the second leading infectious killer, after COVID-19. TB is mainly pulmonary (PTB), which is the first point of entry of the infection; however, it can affect other organs in the body (extra-pulmonary TB). The body's immune response produces the TB granuloma, a histopathological hallmark of TB, made up of pro and anti-inflammatory signatures that are not yet fully understood in terms of function and mode of formation. Although the use of 'omics' techniques looks promising, a lot still needs to be done, as very few works have been conducted using these techniques to better understand the inflammatory pathways of the TB granuloma. Through the use of these methods, several types of TB granulomas have been identified, namely; the solid, caseous, cavitory, non-necrotizing, necrotizing gummatous, and necrotizing abscess, to name a few. Most of what we know is based upon PTB, with extrapolation needed for extra-pulmonary TB granulomas. This mini-review discusses TB granuloma types, mode of identification and characteristics, and the new role of proteomics and metabolomics.