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Oral presentation

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Gut microbial functions are impacted by habitat: implications for the conservation of non-human primates

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We investigate the effect of forest fragmentation on gut microbiota functions and dietary adaptations of two non-human primate species in the Udzungwa Mountains of Tanzania using whole-genome shotgun sequencing. The Udzungwa red colobus (*Procolobus gordonorum*) is an endangered species with a restricted folivorous (leaf-eating) diet, while the yellow baboon (*Papio cynocephalus*) is a species of least concern with a highly diverse omnivorous diet. We identified several microbial pathways that were enriched or decreased in a fragmented forest patch compared to an intact forest, indicating functional adaptations of gut bacteria. The gut microbiota of the Udzungwa red colobus, in particular, shows a high sensitivity to habitat changes, which may be linked to its strictly folivorous feeding strategy. By contrast, the yellow baboon displays greater tolerance to habitat changes by showing a lower impact on their gut microbes, which is likely caused by its more varied diet. To investigate habitat-associated diet in detail, in an ongoing analysis, we aim to reconstruct dietary composition from the same shotgun sequencing samples. We will also present novel results showing the potential and the limits of identifying diet and host characteristics from faecal samples, and hence, the usefulness of this shotgun approach to conservation issues.

Bibliography

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