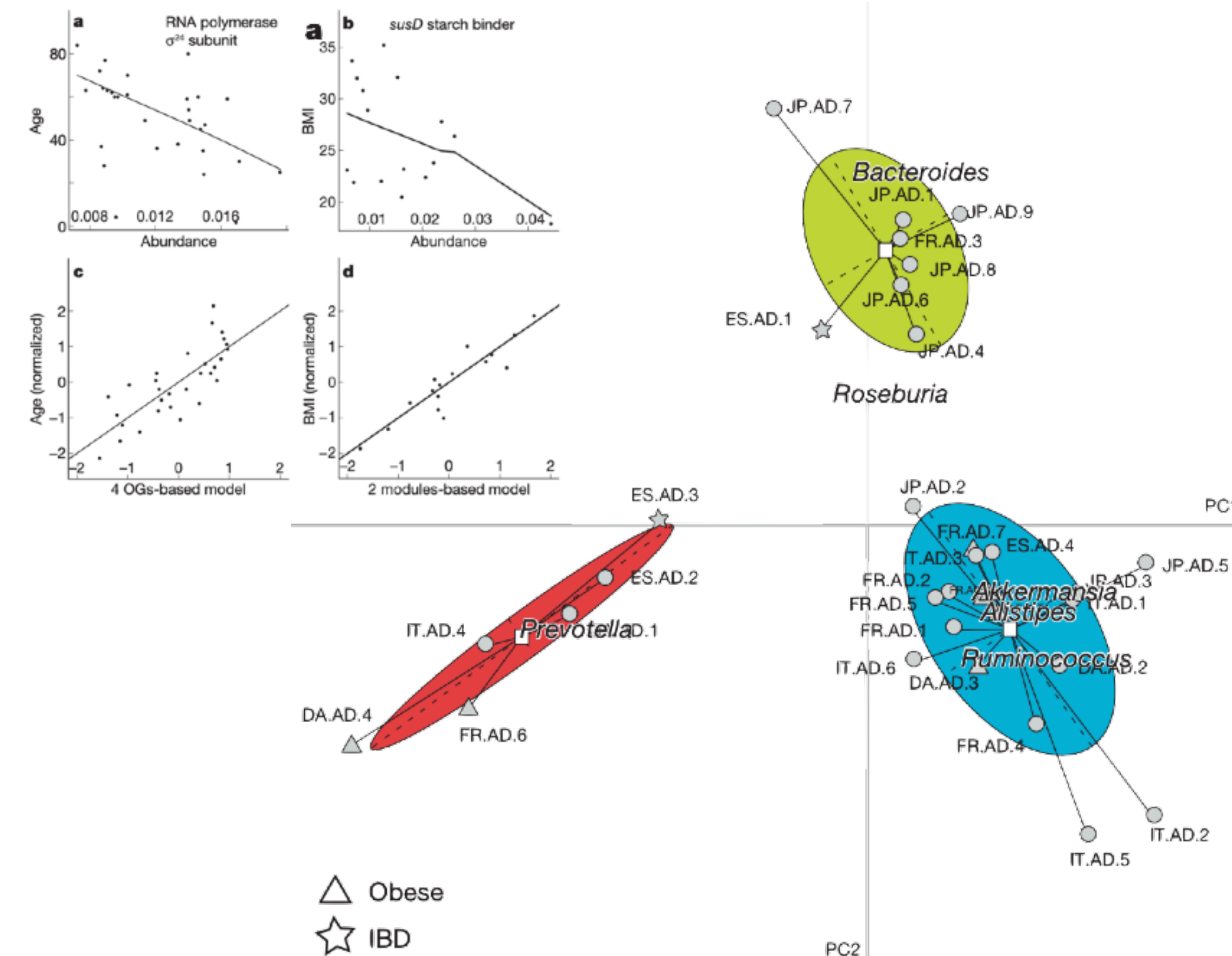


- Enterotypes
- Diabetes tipo 2
- Obesidade
- Doenças inflamatórias intestinais
- Câncer
- Alzheimer
- Autismo
- Depressão
- Segundo cérebro?

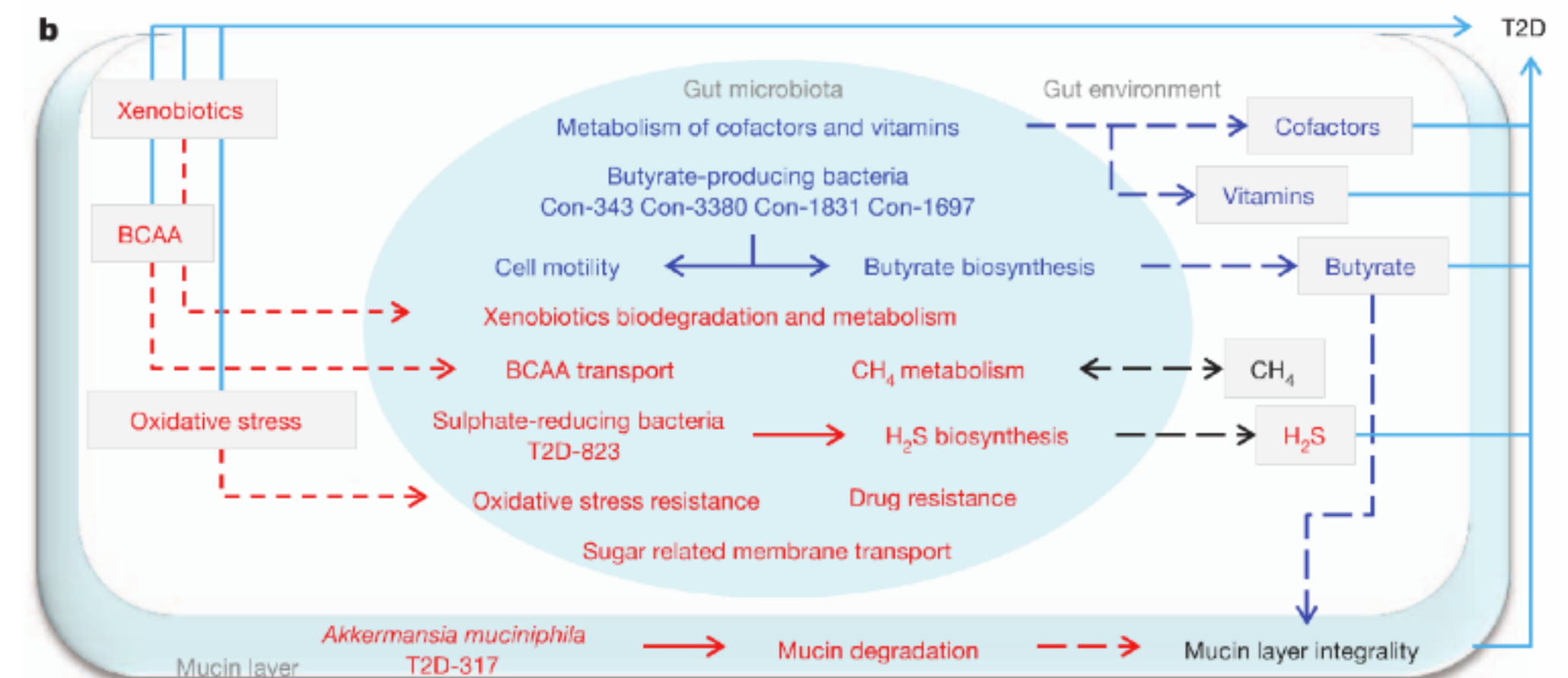
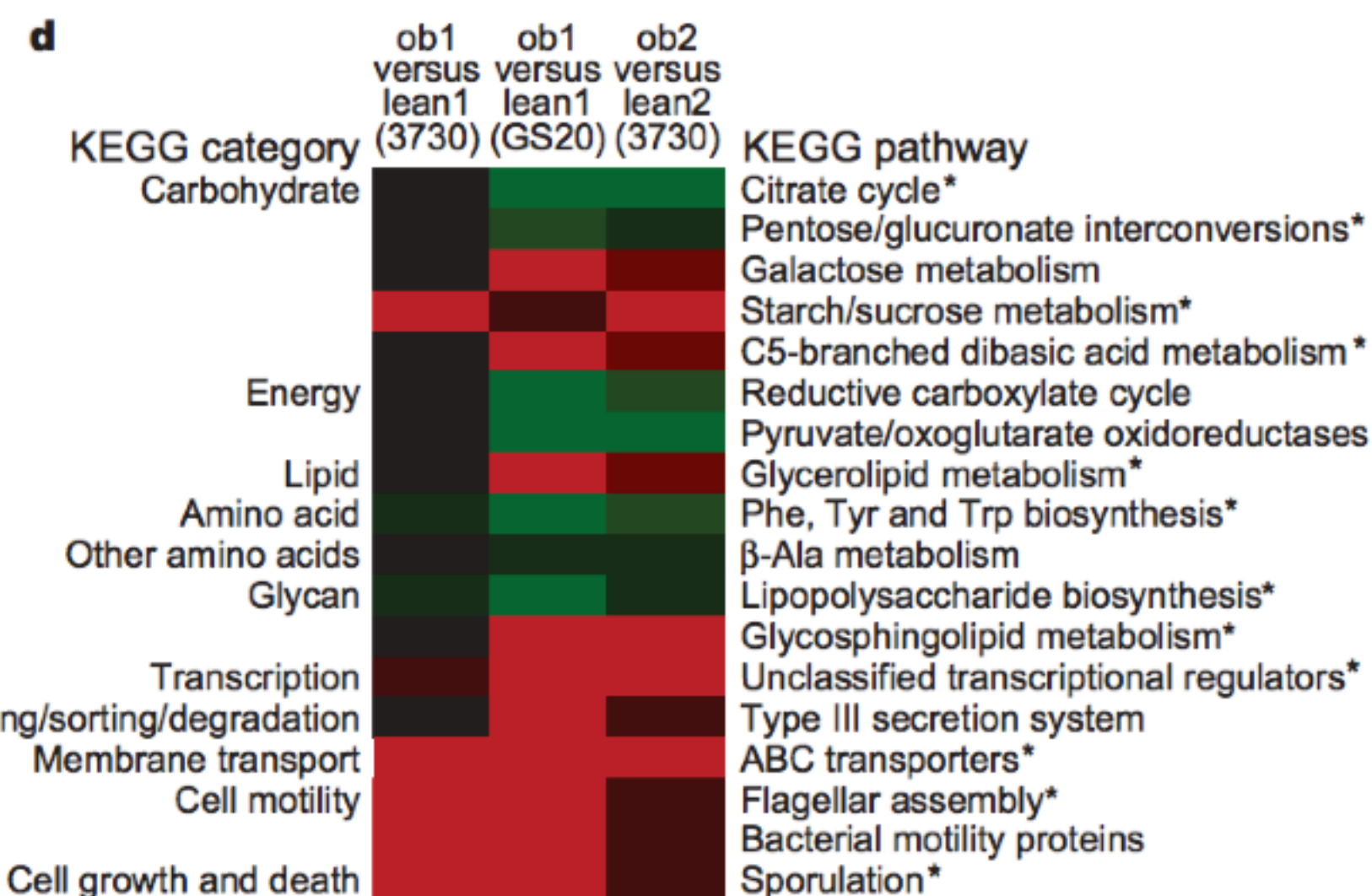
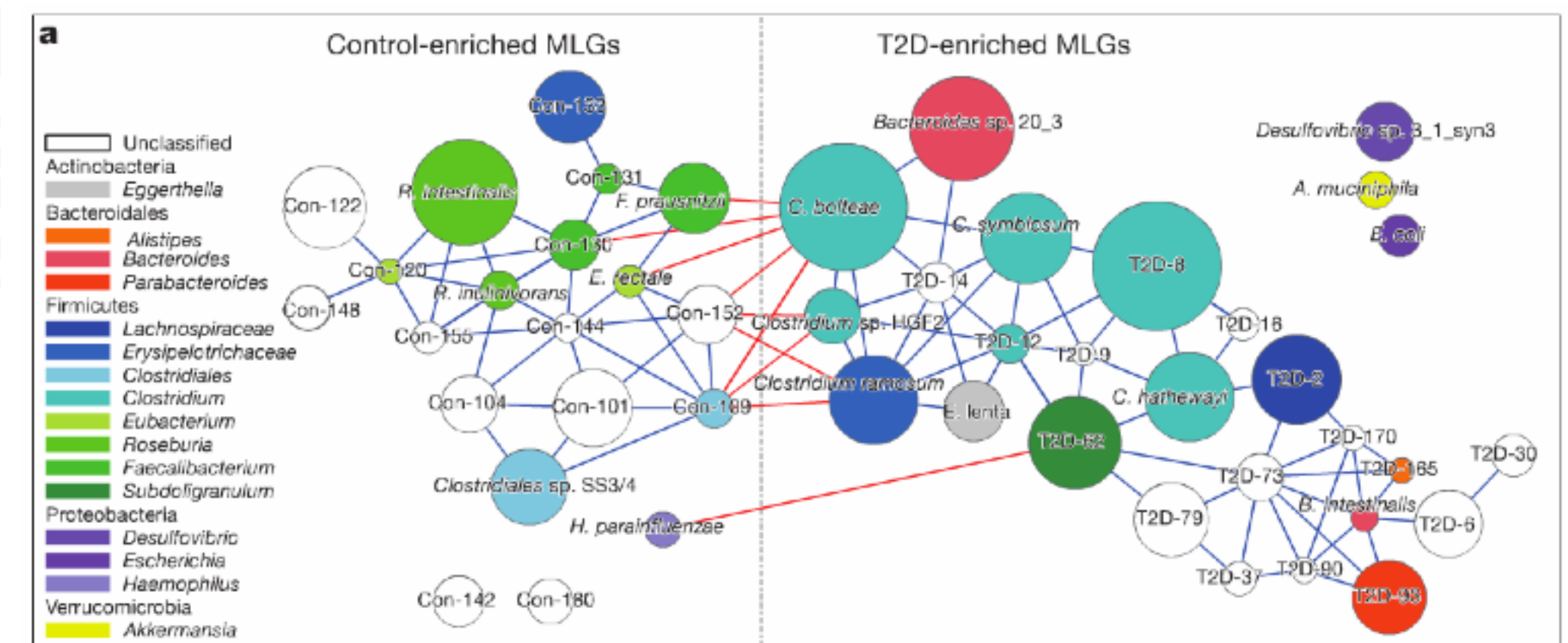
## Enterotypes of the human gut microbiome

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- Obesidade:
  - Razão: *Bacteroidetes/Firmicutes*
- Diabetes tipo 2
  - *Akkermansia muciniphila*



## Gut Microbiota from Twins Discordant for Obesity Modulate Metabolism in Mice

Vanessa K. Ridaura, Jeremiah J. Faith, Federico E. Rey, Jiye Cheng, Alexis E. Duncan, Andrew L. Kau, Nicholas W. Griffin, Vincent Lombard, Bernard Henrissat, James R. Bain, Michael J. Muehlbauer, Olga Ilkayeva, Clay F. Semenkovich, Katsuhiko Funai, David K. Hayashi, Barbara J. Lyle, Margaret C. Martini, Luke K. Ursell, Jose C. Clemente, William Van Treuren, William A. Walters, Rob Knight, Christopher B. Newgard, Andrew C. Heath, Jeffrey I. Gordon\*

Qin J. et al, 2012 - Nature volume 490, pages 55–60

## An obesity-associated gut microbiome with increased capacity for energy harvest

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