

Effect of old age on the subpopulations of enteric glial cells in human descending colon.

Nicholas Baidoo^{1,2}, Gareth J Sanger², Abi Belai¹

¹ University of Roehampton, School of Life Sciences. Holybourne Ave, London. SW15 4JD, UK ² Blizard Institute, Faculty of Medicine and Dentistry, Queen Mary University of London, London, UK.
Presenter email: baidoon@roehampton.ac.uk

Introduction

Increasing age is associated with higher incidence of lower bowel conditions such as constipation.

Recent evidence suggests colonic motility and other functions are influenced by enteric glial cells (EGCs)¹

Aims

Assessed and compared patterns of distribution of EGC subpopulation in adult and elderly human colon.

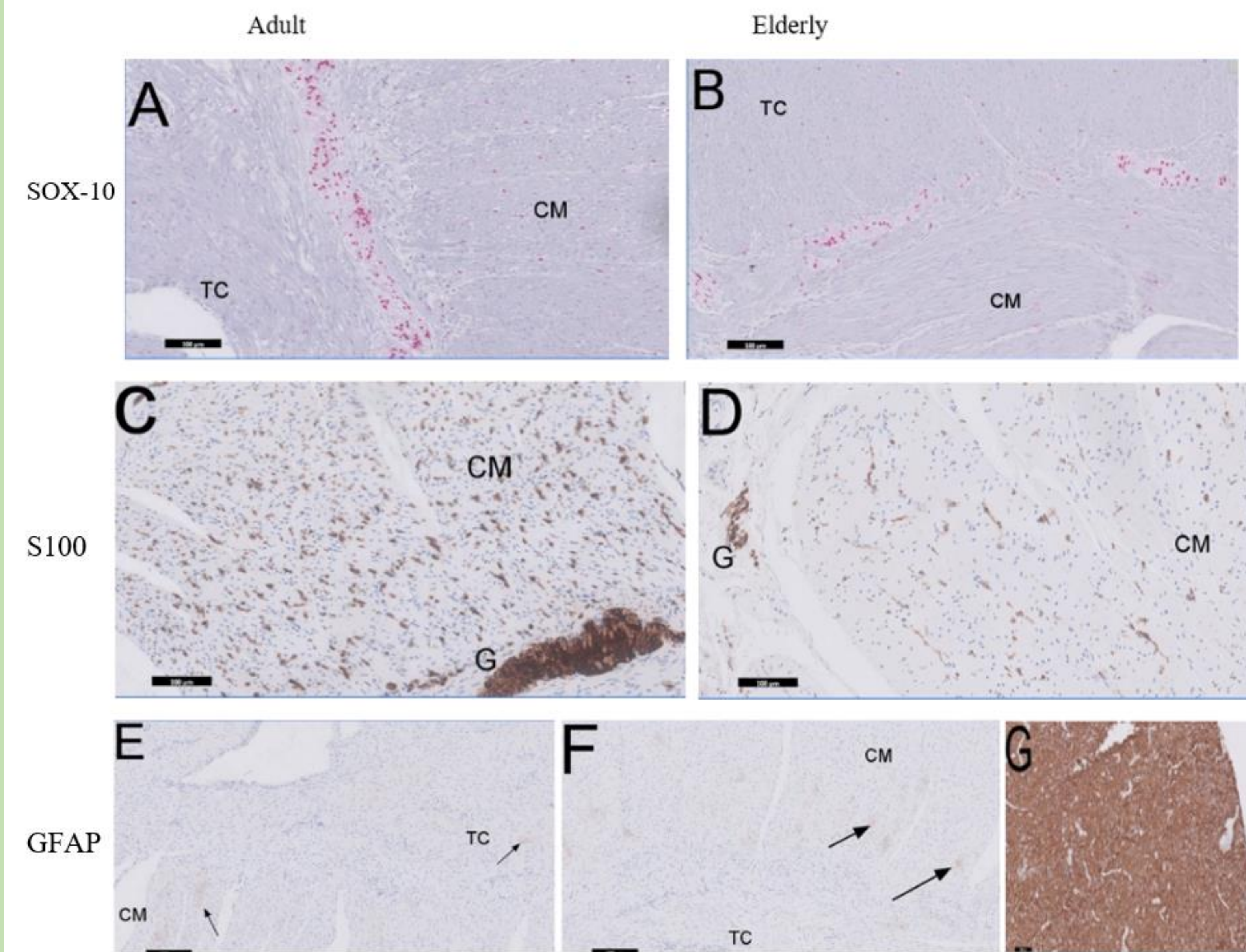
Methods

- Macroscopically normal human descending colon from 23 adult (23-63 years; 6 male, 7 female) and elderly (66-81 year; 6 male, 4 female) cancer patients
- Serial sectioning and immunolabeling with anti-Sox-10, anti-S100 and anti-GFAP (Glial Fibrillary Acidic Protein)
- Standard procedures ensured unbiased counting and densitometric evaluation of EGCs
- Changes determined by independent two-tailed student test

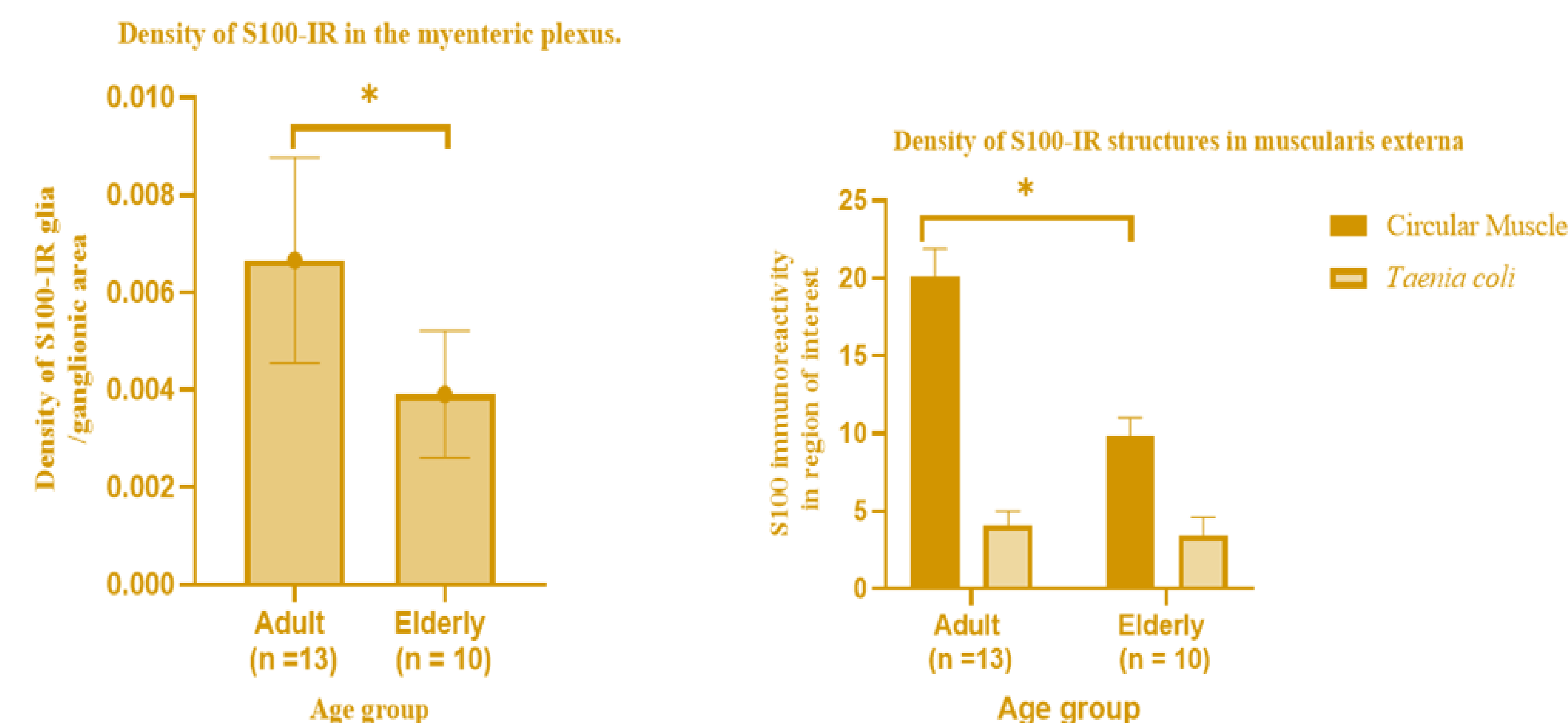
Results

- Density of S100 immunoreactive (IR) EGCs decrease with age in myenteric plexus (MP) and circular muscle.
- Numbers of Sox10-IR EGCs were unaltered with age in the MP (respectively, in adult and elderly, 1,939±82 and 1,760 ± 44 /mm length; $P > 0.05$) and submucosal plexus; there were no differences between adult male/ females
- There were little or no GFAP-IR EGCs in adult/ elderly colon

Enteric glial cells in adult/ elderly human descending colon stained with Sox-10, S100, GFAP



Density of S100 immunoreactive enteric glia cell decrease with age in the myenteric plexus and circular muscle of the human descending colon.



Conclusions

- The intraganglionic and musculature S100-IR EGCs density declined among the elderly.
- Ageing does not result in loss of Sox-10-IR EGCs in the MP and SMP of human descending colon
- Changes in myenteric EGCs density with age may contribute to colonic dysfunction.

References

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- Baidoo, N., Sanger, G. J., & Belai, A. (2023). Effect of old age on the subpopulations of enteric glial cells in human descending colon. *Glia*, 71(2), 305–316. <https://doi.org/10.1002/glia.24272>

All authors declare no conflict of interest