

Summary

- As of 2021, 285 patients received ocular treatment with carbon ions in non-dedicated treatment rooms A (vertical), B (vertical and horizontal), and G (rotating gantry, scanning) at QST over 20 years.
- TPS were either commercial or in-house, either dedicated or set up to include ocular treatment, depending on circumstances. The current TPS handles all treatment sites universally for scanning beams.
- The RBE was the fixed-dose NIRS model (HSG cell line at 14 GyE or $S=0.13\%$ instead of 10% for other sites) and has been compatibly updated with TPS as dose-dependent (Inaniwa *et al* 2015 *Phys. Med. Biol.* **60** 3271).
- Compared to the collimated broad beams, the scanning beams with rotating gantry are inferior in penumbra (1 mm vs 4 mm), but superior in dose conformity and angles, and currently serve as the only radiotherapy for ocular treatment in Japan.