**Table S1.** General overview of the scSeq datasets.

| **Dataset** | **Tissue** | **Location** | **Nr. of cells after filtering** | **Mean/median nr. of UMI** | **Mean/median nr. of features** | **GEO identifier** |
| --- | --- | --- | --- | --- | --- | --- |
| WT 2021 | Leaf developmental zone | Heidelberg (DE) | 2’656 | 12’929/11’594 | 3’674/3’894 | GSM9220335 |
| sid 2021 | Leaf developmental zone | Heidelberg (DE) | 3’427 | 10’256/8’515 | 3’189/3’186 | GSM9220336 |
| WT 2022 | Leaf developmental zone | Heidelberg (DE) | 6’904 | 14’224/12’112 | 4’049/4’171 | GSM9220337 and GSM9220339 |
| sid 2022 | Leaf developmental zone | Heidelberg (DE) | 7’437 | 15’201/13’354 | 4’112/4’250 | GSM9220338 and GSM9220340 |
| WT 2023-05-16 | vSAM & leaf primordia | Heidelberg (DE) | 4’995 | 5’055/4’194 | 2’302/2’153 | GSM9220341 |
| WT 2023-05-17 | vSAM & leaf primordia | Heidelberg (DE) | 2’674 | 4’798/3’938 | 2’230/2’085 | GSM9220342 |
| WT 2024-1 | Leaf developmental zone | Bern (CH) | 13’441 | 5’087/3’956 | 2’223/2’039 | GSM9220343 |
| WT 2024-2 | Leaf developmental zone | Bern (CH) | 11’546 | 6’304/5’366 | 2’720/2’626 | GSM9220344 |
| WT 2024-3 | Leaf developmental zone | Bern (CH) | 16’607 | 6’734/5’955 | 2’841/2’763 | GSM9220345 |