

**Table S9. Baseline characteristics, response pattern and their correlation with enlargement dynamics (multivariate analysis, n=166)**

| Baseline Characteristics                    | Enlargement dynamics <sup>~</sup> |         |
|---|-----------------------------------|---------|
|   | Coefficient (95% CI)              | P value |
| <b>Age<sup>§</sup></b>                      | -0.032 (-0.217 to 0.153)          | .73     |
| <b>Sex<sup>#</sup></b>                      | -1.560 (-6.924 to 3.804)          | .57     |
| <b>Ethnicity<sup>+</sup></b>                | -4.706 (-11.750 to 2.338)         | .19     |
| <b>Subtype<sup>&amp;</sup></b>              |                                   |         |
| Acral                                       | -2.301 (-10.249 to 5.647)         | .57     |
| Mucosal                                     | 4.970 (-3.864 to 13.804)          | .27     |
| Ocular                                      | -2.310 (-13.759 to 9.139)         | .69     |
| UP  | -1.487 (-8.737 to 5.762)          | .69     |
| <b>Mutation<sup>`</sup></b>                 |                                   |         |
| BRAF  | -0.897 (-7.707 to 5.912)          | .79     |
| NRAS  | -2.077 (-10.059 to 5.905)         | .61     |
| C-KIT                                       | 5.611 (-4.599 to 15.821)          | .28     |
| <b>M stage<sup>%</sup></b>                  |                                   |         |
| M1b   | -0.795 (-7.960 to 6.369)          | .83     |
| M1c   | -0.640 (-7.842 to 6.563)          | .86     |
| M1d   | -4.382 (-13.647 to 4.882)         | .35     |
| M0 (unresectable)                           | -8.539 (-28.868 to 11.790)        | .41     |
| <b>Number of organ involved<sup>§</sup></b> | -0.862 (-3.583 to 1.858)          | .53     |
| <b>Response pattern</b>                     |                                   |         |
| <b>Tumor percent change (%)<sup>§</sup></b> | 0.231 (0.180 to 0.282)            | <.001   |
| <b>PFS (month)<sup>§</sup></b>              | 0.418 (0.069 to 0.766)            | .02     |

<sup>~</sup>Linear regression model, incorporating all variables with statistical significance or marginal significance in bivariate analyses (Table S6) and also adjusted for target lesion size at baseline. <sup>§</sup>As a continuous variable. <sup>#</sup>Female as the reference group. <sup>+</sup>Non-Caucasian as the reference group. <sup>&</sup>Cutaneous melanoma as the reference. <sup>`</sup>Others as the reference group. <sup>%</sup>M1a as the reference group.