**Mineral chemistry information**

The main compositional features of plagioclase and K-feldspar from the studied trondhjemitic and granitic rocks are schematically reported in Fig. S1.

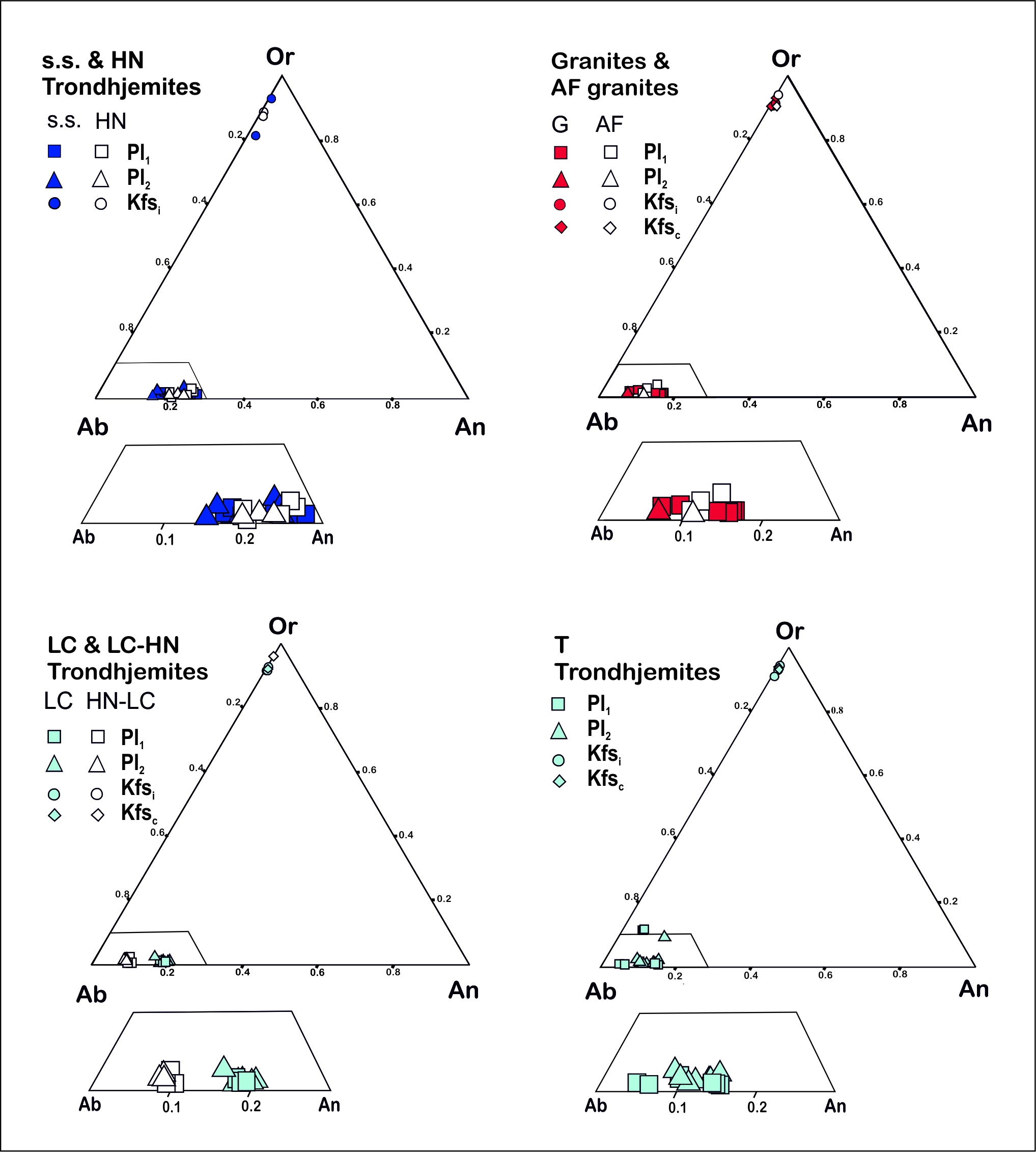


Fig. S1. Feldspar compositions for the studied granitoid rocks. Pl1: plagioclase with magmatic features;

Pl2: plagioclase with secondary features; Kfsi: K-feldspar island in Pl2; Kfsc: individual K-feldspar crystal.

Plagioclase is oligoclase in either the s.s. and HN trondhjemites, with a slight tendency of secondary plagioclase (Pl2) to have more albitic compositions than plagioclase with magmatic features (Pl1).

Single spot and averaged multipoint analyses for plagioclase inner core, outer core and rim portions indicate An16.8-26.6 and An18.8-20.1 for Pl1 crystals of s.s. and HN trondhjemites, respectively, and An14.9-24.1 and An19.2-23 for the corresponding Pl2 crystals. Compositions reflect a dominant weak oscillatory zoning and rare normal zoning for both Pl1 and Pl2 crystals; compositional variations rarely reach 5-6 % An in single crystals of trondhjemites s.s., while variations up to 12-13 % An have been recorded in some crystals of HN trondhjemites. K-feldspar compositions are in the range Or81.7-92.9.

Plagioclase from LC trondhjemites is mostly oligoclase, with averaged An17.3-18.7 in Pl1 crystals and An15.2-19.9 in Pl2 crystals, with some albitic compositions occurring among the latter types; plagioclase from HN-LC is albite, with nearly identical average compositions in Pl1 (An8.5-9.9) and Pl2 (An7.7-8.2) and only three spots (two Pl1 and one Pl2) having An10.2-11.4 (Fig. 5). K-feldspar has composition Or91.6-92.6 and Or91.7-95.8 in LC and HN-LC trondhjemites, respectively, with no systematic variation between crystals internal or external to plagioclase.

Plagioclase composition is mostly oligoclase in the T trondhjemites, with XAn up to 14.7 and 14.1 in Pl1 and Pl2 types, respectively; a few albitic compositions also occur, with lowest values of An4.3 in Pl1 and An8.3 in Pl2 crystals. String and patch perthite plagioclase also has a rather constant albitic composition, with average values of An2.43. Some unusually Or-rich compositions, with XOr around 10 have been reported by Stella (2010); it is however to be reported that feldspars affected by fluid interaction can contain sub-micron inclusions of sericite, that can lead to overestimation of the K content of plagioclase (e.g. Plumper & Putnis, 2009). K-feldspar is in the range Or91.3-94.3, with no variation between crystals in different textural relationships with plagioclase.

Granites have Pl1 crystals characterized by normal zoning and dominant oligoclase composition (An14.2-16.4); a few albite compositions of An9.2 and An7.0 have been measured in outer core and rim portions, respectively. Albite compositions (An7.0) have been also obtained for Pl2 in myrmekites, as well as for string and patch perthites, with average An contents in the range 2.59-4.63 and 2.59-3.35, respectively. K-felsdpar composition (Or90.7-93.3) is nearly the same in either island and large individual crystals.

Finally, in the alkali feldspar granites Pl1 displays oscillatory zoning in the range An10.8-13., while myrmekitic plagioclase has an average composition of An11.4 that, however, results from an average of only two, quite distant values of An5.1 and An17.6; string and patch perthites have average similar average An contents, with average compositions of An3.6Ab90.8Or5.7 and An3.5Ab94.5Or2.1, respectively. K-feldspar island inclusions in plagioclase have a slightly higher average Or content (Or94.4) than K-feldspar in individual crystals (Or90.7) but, on the whole, the compositions of all feldspar types overlap with those observed for the granites s.s..