

## Orogenic volcanism in Kurdistan Province of Iran

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Late Miocene volcanic rocks largely outcrop north of Dehgolan and east of Qorveh, in Kurdistan province of Iran.

These rocks belong to the UDMA (Urumieh-Dokhtar Magmatic Arc or Urumieh-Dokhtar Magmatic Assemblage), a 2000 km-long and 20-100 km-wide volcanic belt, running parallel to the Zagros belt in NW-SE direction and crossing most part of Western Iran. The UDMA spans in age from Eocene to Quaternary, and it is mainly made up by calc-alkaline and shoshonitic products, but tholeiitic lavas and alkali basalts are also found.

We collected 27 rocks samples belonging to intermediate-acidic domes with associated lava flows: Dehgolan samples are dacites and trachytes, whereas Qorveh rocks may be classified as trachy-andesites, trachytes and rhyolites, with SiO<sub>2</sub>. All of the samples belong to a high-K calc-alkaline association, with the exception of 3 Dehgolan trachytes, characterized by a markedly higher K content, and falling in the field of shoshonitic series.

Trace element distribution of samples from Dehgolan and Qorveh are quite similar, PM-normalized spider diagrams are typical of orogenic rocks, with deep Nb-Ta, P and Ti trenches, and LILE enrichments, and Pb positive spikes.

Samples are generally porphyritic, and most frequent phenocrists are oligoclase to labradorite plagioclase, frequently showing reversal or oscillatory zoning, and pargasitic amphibole, rimmed by orthopyroxene and oxides.

Sr, Nd and Pb ratios vary in a quite narrow ranges (<sup>87</sup>Sr/<sup>86</sup>Sr ≈ 0.7061-0.7072, <sup>143</sup>Nd/<sup>144</sup>Nd ≈ 0.51247-0.51254, <sup>206</sup>Pb/<sup>204</sup>Pb ≈ 18.88-19.00), with the exception of the K-Trachytes, characterized by markedly higher Sr and lower Nd isotopes (0.7111 and 0.51226, respectively).

The petrological and geochemical features of studied rocks point out a mantle source modified by slab related fluids, and magmas evolved in complex and shallow magma chambers, where crustal contamination was negligible for all the samples, but the K-Trachytes.