**S2 Table. Geographical references of reported autochthonous symptomatic and asymptomatic infections by *Leishmania infantum* in animals and/or humans in European countries, between 2009 and 2020.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Country** | **Division** | **Location** | **Infections** | **References** |
| **Code** | **Name** | **Latitude** | **Longitude** | **Animals** | **Humans** |
| Albania | NUTS-3 | AL011 | Dibër | 41.607 | 20.247 | Yes | Yes | [1,2] |
| NUTS-3 | AL012 | Durrës | 41.451 | 19.639 | Yes | Yes | [1,2] |
| NUTS-3 | AL013 | Kukës | 42.195 | 20.243 | Yes | Yes | [1,3,4] |
| NUTS-3 | AL014 | Lezhë | 41.790 | 19.838 | Yes | Yes | [1,2] |
| NUTS-3 | AL015 | Shkodër | 42.174 | 19.720 | Yes | Yes | [1,4] |
| NUTS-3 | AL021 | Elbasan | 41.054 | 20.191 | Yes | Yes | [1,2] |
| NUTS-3 | AL022 | Tiranë | 41.266 | 19.796 | Yes | Yes | [1,2,5–7] |
| NUTS-3 | AL031 | Berat | 40.626 | 20.115 | Yes | Yes | [1,4,8] |
| NUTS-3 | AL032 | Fier | 40.759 | 19.623 | No | Yes | [1] |
| NUTS-3 | AL033 | Gjirokastër | 40.216 | 20.170 | No | Yes | [1] |
| NUTS-3 | AL034 | Korcë | 40.629 | 20.670 | Yes | Yes | [1–3,8] |
| NUTS-3 | AL035 | Vlorë | 40.149 | 19.818 | Yes | Yes | [1,2,4,8] |
| Austria | NUTS-3 | AT127 | Wiener Umland/Südteil | 48.052 | 16.445 | Yes | No | [9] |
| Bosnia and Herzegovina | GAUL-2 | BAG26241 | Gornjedrinski | 43.667 | 18.818 | Yes | No | [10] |
| GAUL-2 | BAG26242 | Neretvljanski | 43.409 | 17.841 | Yes | No | [10,11] |
| GAUL-2 | BAG26243 | Posavski | 45.051 | 18.491 | Yes | No | [10] |
| GAUL-2 | BAG26244 | Sarajevo | 43.814 | 18.340 | Yes | No | [10] |
| GAUL-2 | BAG26246 | Tuzlansko-podrinjski | 44.569 | 18.597 | Yes | No | [10] |
| GAUL-2 | BAG26247 | Unsko-sanski | 44.791 | 16.244 | Yes | No | [10] |
| GAUL-2 | BAG26248 | Zapadnobosanski | 44.008 | 16.841 | Yes | No | [10] |
| GAUL-2 | BAG26250 | Zenicko-dobojski | 44.290 | 18.181 | Yes | No | [10] |
| Bulgaria | NUTS-3 | BG311 | Vidin | 43.798 | 22.701 | No | Yes | [12], MoH Bulgaria1 |
| NUTS-3 | BG315 | Lovech | 43.026 | 24.554 | No | Yes | [12] |
| NUTS-3 | BG321 | Veliko Tarnovo | 43.190 | 25.628 | No | Yes | [12], MoH Bulgaria1 |
| NUTS-3 | BG322 | Gabrovo | 42.937 | 25.227 | No | Yes | MoH Bulgaria1 |
| NUTS-3 | BG331 | Varna | 43.178 | 27.584 | No | Yes | [12] |
| NUTS-3 | BG341 | Burgas | 42.491 | 27.308 | No | Yes | MoH Bulgaria1 |
| NUTS-3 | BG342 | Sliven | 42.680 | 26.238 | No | Yes | MoH Bulgaria1 |
| NUTS-3 | BG343 | Yambol | 42.291 | 26.627 | No | Yes | [12] |
| NUTS-3 | BG344 | Stara Zagora | 42.430 | 25.557 | No | Yes | [12] |
| NUTS-3 | BG411 | Sofia (stolitsa) | 42.678 | 23.368 | No | Yes | [12], MoH Bulgaria1 |
| NUTS-3 | BG413 | Blagoevgrad | 41.723 | 23.439 | Yes | Yes | [12], MoH Bulgaria1 |
| NUTS-3 | BG415 | Kyustendil | 42.270 | 22.862 | No | Yes | [12] |
| NUTS-3 | BG421 | Plovdiv | 42.265 | 24.819 | No | Yes | [12], MoH Bulgaria1 |
| NUTS-3 | BG422 | Haskovo | 41.852 | 25.924 | Yes | Yes | [12] |
| NUTS-3 | BG423 | Pazardzhik | 42.137 | 24.153 | No | Yes | [12] |
| NUTS-3 | BG424 | Smolyan | 41.629 | 24.668 | No | Yes | MoH Bulgaria1 |
| NUTS-3 | BG425 | Kardzhali | 41.533 | 25.437 | No | Yes | [12], MoH Bulgaria1 |
| Croatia | NUTS-3 | HR033 | Zadarska županija | 44.187 | 15.602 | No | Yes | [13] |
| NUTS-3 | HR034 | Šibensko-kninska županija | 43.893 | 16.056 | Yes | Yes | [13,14] |
| NUTS-3 | HR035 | Splitsko-dalmatinska županija | 43.481 | 16.717 | Yes | Yes | [5,13–16] |
| NUTS-3 | HR036 | Istarska županija | 45.201 | 13.897 | Yes | No | [17] |
| NUTS-3 | HR037 | Dubrovacko-neretvanska županija | 42.880 | 17.554 | Yes | Yes | [5,13,16,18] |
| NUTS-3 | HR050 | Grad Zagreb | 45.828 | 16.022 | No | Yes | [19] |
| NUTS-3 | HR061 | Međimurska županija | 46.404 | 16.531 | No | Yes | [16] |
| Cyprus | NUTS-3 | CY000 | Kýpros | 35.051 | 33.225 | Yes | No | [5,20–23] |
| France | NUTS-3 | FR101 | Paris | 48.856 | 2.338 | Yes | No | [24] |
| NUTS-3 | FRB02 | Eure-et-Loir | 48.376 | 1.366 | No | Yes | [25] |
| NUTS-3 | FRB04 | Indre-et-Loire | 47.258 | 0.682 | Yes | No | [26] |
| NUTS-3 | FRG02 | Maine-et-Loire | 47.389 | -0.561 | Yes | No | [26] |
| NUTS-3 | FRI11 | Dordogne | 45.104 | 0.740 | No | Yes | [27] |
| NUTS-3 | FRI14 | Lot-et-Garonne | 44.363 | 0.459 | Yes | No | [26] |
| NUTS-3 | FRI23 | Haute-Vienne | 45.886 | 1.228 | Yes | No | [26] |
| NUTS-3 | FRI33 | Deux-Sèvres | 46.553 | -0.318 | Yes | No | [26] |
| NUTS-3 | FRJ11 | Aude | 43.104 | 2.422 | Yes | Yes | [26,28] |
| NUTS-3 | FRJ12 | Gard | 43.995 | 4.175 | Yes | Yes | [26,28] |
| NUTS-3 | FRJ13 | Hérault | 43.576 | 3.366 | Yes | Yes | [26,28,29] |
| NUTS-3 | FRJ14 | Lozère | 44.523 | 3.494 | Yes | Yes | [26,28] |
| NUTS-3 | FRJ15 | Pyrénées-Orientales | 42.598 | 2.529 | Yes | Yes | [26,28] |
| NUTS-3 | FRJ21 | Ariège | 42.920 | 1.515 | Yes | No | [26] |
| NUTS-3 | FRJ22 | Aveyron | 44.277 | 2.684 | Yes | Yes | [26,28] |
| NUTS-3 | FRJ23 | Haute-Garonne | 43.355 | 1.165 | Yes | Yes | [30,31] |
| NUTS-3 | FRJ27 | Tarn | 43.785 | 2.168 | Yes | No | [26] |
| NUTS-3 | FRK13 | Haute-Loire | 45.126 | 3.807 | Yes | No | [26] |
| NUTS-3 | FRK14 | Puy-de-Dôme | 45.726 | 3.136 | Yes | No | [26] |
| NUTS-3 | FRK22 | Ardèche | 44.756 | 4.430 | Yes | Yes | [26,28] |
| NUTS-3 | FRK23 | Drôme | 44.682 | 5.168 | No | Yes | [28] |
| NUTS-3 | FRK26 | Rhône | 45.875 | 4.647 | Yes | No | [32] |
| NUTS-3 | FRK28 | Haute-Savoie | 46.053 | 6.434 | No | Yes | [33] |
| NUTS-3 | FRL01 | Alpes-de-Haute-Provence | 44.094 | 6.247 | Yes | Yes | [26,28] |
| NUTS-3 | FRL03 | Alpes-Maritimes | 43.929 | 7.120 | Yes | Yes | [26,28,34–36] |
| NUTS-3 | FRL04 | Bouches-du-Rhône | 43.545 | 5.104 | Yes | Yes | [26,28,37–39] |
| NUTS-3 | FRL05 | Var | 43.437 | 6.252 | Yes | Yes | [26,28,37,40,41] |
| NUTS-3 | FRL06 | Vaucluse | 44.012 | 5.164 | Yes | Yes | [26,28] |
| NUTS-3 | FRM01 | Corse-du-Sud | 41.864 | 8.993 | Yes | Yes | [26,28,37] |
| Germany | NUTS-3 | DE21E | Landsberg am Lech | 48.037 | 10.951 | Yes | No | [42] |
| NUTS-3 | DE271 | Augsburg, Kreisfreie Stadt | 48.350 | 10.889 | Yes | No | [42] |
| NUTS-3 | DEA23 | Köln, Kreisfreie Stadt | 50.960 | 6.965 | Yes | No | [42] |
| NUTS-3 | DEA2D | Städteregion Aachen | 50.729 | 6.218 | No | Yes | [42] |
| Greece | NUTS-3 | EL301 | Voreios Tomeas Athinon | 38.046 | 23.814 | Yes | Yes | [43–50], MoH Greece2 |
| NUTS-3 | EL302 | Dytikos Tomeas Athinon | 38.015 | 23.663 | Yes | Yes | [46,50], MoH Greece2 |
| NUTS-3 | EL303 | Kentrikos Tomeas Athinon | 37.982 | 23.757 | Yes | Yes | [5,46,50–58], MoH Greece2 |
| NUTS-3 | EL304 | Notios Tomeas Athinon | 37.914 | 23.739 | Yes | Yes | [46,50], MoH Greece2 |
| NUTS-3 | EL305 | Anatoliki Attiki | 38.024 | 23.886 | No | Yes | [46], MoH Greece2 |
| NUTS-3 | EL306 | Dytiki Attiki | 38.095 | 23.392 | Yes | Yes | [46,50,59], MoH Greece2 |
| NUTS-3 | EL307 | Peiraias, Nisoi | 37.129 | 23.374 | No | Yes | [46], MoH Greece2 |
| NUTS-3 | EL411 | Lesvos, Limnos | 39.338 | 25.998 | Yes | Yes | [5,46,50,60], MoH Greece2 |
| NUTS-3 | EL412 | Ikaria, Samos | 37.672 | 26.526 | No | Yes | [46], MoH Greece2 |
| NUTS-3 | EL413 | Chios | 38.412 | 25.983 | Yes | Yes | [46,50], MoH Greece2 |
| NUTS-3 | EL421 | Kalymnos, Karpathos, Kasos, Kos, Rodos | 36.326 | 27.497 | Yes | Yes | [46,50], MoH Greece2 |
| NUTS-3 | EL422 | Andros, Thira, Kea, Milos, Mykonos, Naxos, Paros, Syros, Tinos | 37.134 | 25.097 | Yes | Yes | [44,46,50], MoH Greece2 |
| NUTS-3 | EL431 | Irakleio | 35.140 | 25.125 | Yes | Yes | [5,46,50,61], MoH Greece2 |
| NUTS-3 | EL432 | Lasithi | 35.129 | 25.790 | Yes | Yes | [5,46,50], MoH Greece2 |
| NUTS-3 | EL433 | Rethymni | 35.259 | 24.618 | Yes | Yes | [5,44,46,50,52,61–63], MoH Greece2 |
| NUTS-3 | EL434 | Chania | 35.360 | 23.932 | Yes | Yes | [46,50,61], MoH Greece2 |
| NUTS-3 | EL511 | Evros | 41.194 | 26.152 | Yes | Yes | [43,44,46,50] |
| NUTS-3 | EL512 | Xanthi | 41.159 | 24.904 | Yes | Yes | [46,50,64,65], MoH Greece2 |
| NUTS-3 | EL513 | Rodopi | 41.107 | 25.503 | Yes | Yes | [46,50], MoH Greece2 |
| NUTS-3 | EL514 | Drama | 41.298 | 24.200 | Yes | Yes | [5,46,50], MoH Greece2 |
| NUTS-3 | EL515 | Thasos, Kavala | 40.918 | 24.447 | Yes | Yes | [5,46,50], MoH Greece2 |
| NUTS-3 | EL521 | Imathia | 40.548 | 22.239 | Yes | Yes | [5,46,50], MoH Greece2 |
| NUTS-3 | EL522 | Thessaloniki | 40.693 | 23.128 | Yes | Yes | [5,44,46,50,60,66–71], MoH Greece2 |
| NUTS-3 | EL523 | Kilkis | 41.030 | 22.752 | No | Yes | [46], MoH Greece2 |
| NUTS-3 | EL524 | Pella | 40.883 | 22.131 | No | Yes | [46] |
| NUTS-3 | EL525 | Pieria | 40.252 | 22.437 | No | Yes | [46], MoH Greece2 |
| NUTS-3 | EL526 | Serres | 41.089 | 23.523 | Yes | Yes | [43,44,46,50,60], MoH Greece2 |
| NUTS-3 | EL527 | Chalkidiki | 40.317 | 23.567 | Yes | Yes | [46,50,60,71], MoH Greece2 |
| NUTS-3 | EL531 | Grevena, Kozani | 40.206 | 21.597 | No | Yes | [46], MoH Greece2 |
| NUTS-3 | EL532 | Kastoria | 40.463 | 21.154 | Yes | Yes | [46,60] |
| NUTS-3 | EL533 | Florina | 40.756 | 21.430 | Yes | Yes | [43,44,46,50], MoH Greece2 |
| NUTS-3 | EL541 | Arta, Preveza | 39.245 | 20.968 | Yes | Yes | [5,46,50], MoH Greece2 |
| NUTS-3 | EL542 | Thesprotia | 39.523 | 20.405 | Yes | Yes | [46,50], MoH Greece2 |
| NUTS-3 | EL543 | Ioannina | 39.810 | 20.807 | Yes | Yes | [5,43,44,46,50,72], MoH Greece2 |
| NUTS-3 | EL611 | Karditsa, Trikala | 39.502 | 21.717 | Yes | Yes | [5,44,46,50,73–77], MoH Greece2 |
| NUTS-3 | EL612 | Larisa | 39.703 | 22.399 | Yes | Yes | [46,54,74,78], MoH Greece2 |
| NUTS-3 | EL613 | Magnisia, Sporades | 39.266 | 23.010 | Yes | Yes | [46,50,74,75,79], MoH Greece2 |
| NUTS-3 | EL621 | Zakynthos | 37.793 | 20.765 | Yes | Yes | [46,61], MoH Greece2 |
| NUTS-3 | EL622 | Kerkyra | 39.648 | 19.821 | Yes | Yes | [5,46,50,61], MoH Greece2 |
| NUTS-3 | EL623 | Ithaki, Kefallinia | 38.239 | 20.586 | Yes | Yes | [46,50], MoH Greece2 |
| NUTS-3 | EL624 | Lefkada | 38.690 | 20.705 | Yes | Yes | [46,50], MoH Greece2 |
| NUTS-3 | EL631 | Aitoloakarnania | 38.683 | 21.393 | Yes | Yes | [46,50], MoH Greece2 |
| NUTS-3 | EL632 | Achaia | 38.057 | 21.898 | Yes | Yes | [5,46,50], MoH Greece2 |
| NUTS-3 | EL633 | Ileia | 37.737 | 21.563 | No | Yes | [46], MoH Greece2 |
| NUTS-3 | EL641 | Voiotia | 38.371 | 23.080 | Yes | Yes | [46,50], MoH Greece2 |
| NUTS-3 | EL642 | Evvoia | 38.548 | 23.805 | Yes | Yes | [5,43,44,46,50], MoH Greece2 |
| NUTS-3 | EL643 | Evrytania | 38.984 | 21.671 | Yes | Yes | [43,44,46] |
| NUTS-3 | EL644 | Fthiotida | 38.860 | 22.507 | Yes | Yes | [5,46,50,80], MoH Greece2 |
| NUTS-3 | EL645 | Fokida | 38.541 | 22.250 | Yes | Yes | [46,50], MoH Greece2 |
| NUTS-3 | EL651 | Argolida, Arkadia | 37.521 | 22.510 | Yes | Yes | [5,44,46,50], MoH Greece2 |
| NUTS-3 | EL652 | Korinthia | 37.919 | 22.711 | Yes | Yes | [46,50], MoH Greece2 |
| NUTS-3 | EL653 | Lakonia, Messinia | 37.003 | 22.313 | No | Yes | [46], MoH Greece2 |
| Hungary | NUTS-3 | HU233 | Tolna | 46.512 | 18.538 | Yes | No | [81] |
| Italy | NUTS-3 | ITC11 | Torino | 45.145 | 7.449 | Yes | Yes | [82,83] |
| NUTS-3 | ITC12 | Vercelli | 45.515 | 8.224 | Yes | No | [83] |
| NUTS-3 | ITC13 | Biella | 45.584 | 8.088 | Yes | No | [83] |
| NUTS-3 | ITC14 | Verbano-Cusio-Ossola | 46.085 | 8.348 | Yes | No | [83] |
| NUTS-3 | ITC15 | Novara | 45.565 | 8.559 | Yes | No | [83] |
| NUTS-3 | ITC16 | Cuneo | 44.470 | 7.588 | Yes | No | [83] |
| NUTS-3 | ITC17 | Asti | 44.871 | 8.197 | Yes | Yes | [82–84] |
| NUTS-3 | ITC18 | Alessandria | 44.829 | 8.661 | Yes | Yes | [82,83] |
| NUTS-3 | ITC20 | Valle d’Aosta/Vallée d’Aoste | 45.734 | 7.400 | Yes | No | [83,85] |
| NUTS-3 | ITC31 | Imperia | 43.952 | 7.809 | Yes | Yes | [36,83,86,87] |
| NUTS-3 | ITC32 | Savona | 44.285 | 8.299 | Yes | No | [83] |
| NUTS-3 | ITC33 | Genova | 44.467 | 9.112 | Yes | Yes | [83,88] |
| NUTS-3 | ITC34 | La Spezia | 44.224 | 9.722 | Yes | No | [83] |
| NUTS-3 | ITC41 | Varese | 45.801 | 8.782 | Yes | No | [83,85] |
| NUTS-3 | ITC42 | Como | 45.929 | 9.158 | Yes | No | [83] |
| NUTS-3 | ITC43 | Lecco | 45.888 | 9.396 | Yes | No | [83] |
| NUTS-3 | ITC44 | Sondrio | 46.293 | 9.907 | Yes | No | [83] |
| NUTS-3 | ITC46 | Bergamo | 45.792 | 9.788 | Yes | No | [83] |
| NUTS-3 | ITC47 | Brescia | 45.698 | 10.316 | Yes | No | [83,85] |
| NUTS-3 | ITC48 | Pavia | 45.100 | 9.043 | Yes | No | [83] |
| NUTS-3 | ITC49 | Lodi | 45.226 | 9.586 | Yes | No | [83,89] |
| NUTS-3 | ITC4A | Cremona | 45.222 | 9.989 | Yes | No | [83] |
| NUTS-3 | ITC4B | Mantova | 45.121 | 10.760 | Yes | No | [83,85] |
| NUTS-3 | ITC4C | Milano | 45.462 | 9.130 | Yes | No | [83,90–95] |
| NUTS-3 | ITC4D | Monza e della Brianza | 45.636 | 9.262 | Yes | No | [83] |
| NUTS-3 | ITF11 | L’Aquila | 42.108 | 13.619 | Yes | No | [83] |
| NUTS-3 | ITF12 | Teramo | 42.649 | 13.747 | Yes | No | [83,96–98] |
| NUTS-3 | ITF13 | Pescara | 42.357 | 14.011 | Yes | No | [83,85] |
| NUTS-3 | ITF14 | Chieti | 42.094 | 14.398 | Yes | No | [83,85] |
| NUTS-3 | ITF21 | Isernia | 41.643 | 14.237 | Yes | No | [83] |
| NUTS-3 | ITF22 | Campobasso | 41.709 | 14.773 | Yes | Yes | [83,99,100] |
| NUTS-3 | ITF31 | Caserta | 41.211 | 14.153 | Yes | No | [83,101] |
| NUTS-3 | ITF32 | Benevento | 41.258 | 14.752 | Yes | No | [83] |
| NUTS-3 | ITF33 | Napoli | 40.873 | 14.389 | Yes | No | [83,85,102–108] |
| NUTS-3 | ITF34 | Avellino | 40.996 | 15.066 | Yes | Yes | [83,109] |
| NUTS-3 | ITF35 | Salerno | 40.462 | 15.210 | Yes | No | [83,110] |
| NUTS-3 | ITF43 | Taranto | 40.586 | 17.262 | Yes | No | [83,85] |
| NUTS-3 | ITF44 | Brindisi | 40.618 | 17.715 | Yes | Yes | [83,111,112] |
| NUTS-3 | ITF45 | Lecce | 40.200 | 18.138 | Yes | No | [83,85] |
| NUTS-3 | ITF46 | Foggia | 41.538 | 15.545 | Yes | No | [83] |
| NUTS-3 | ITF47 | Bari | 40.927 | 16.754 | Yes | Yes | [83,85,113–117] |
| NUTS-3 | ITF48 | Barletta-Andria-Trani | 41.182 | 16.179 | Yes | No | [83,85] |
| NUTS-3 | ITF51 | Potenza | 40.543 | 15.872 | Yes | No | [83,118] |
| NUTS-3 | ITF52 | Matera | 40.466 | 16.474 | Yes | No | [83,119] |
| NUTS-3 | ITF61 | Cosenza | 39.560 | 16.318 | Yes | Yes | [83,85,100,120] |
| NUTS-3 | ITF62 | Crotone | 39.191 | 16.921 | Yes | No | [83] |
| NUTS-3 | ITF63 | Catanzaro | 38.892 | 16.487 | Yes | Yes | [83,121,122] |
| NUTS-3 | ITF64 | Vibo Valentia | 38.617 | 16.197 | Yes | No | [83] |
| NUTS-3 | ITF65 | Reggio di Calabria | 38.280 | 16.043 | Yes | No | [83] |
| NUTS-3 | ITG11 | Trapani | 37.814 | 12.793 | Yes | Yes | [83,123] |
| NUTS-3 | ITG12 | Palermo | 37.887 | 13.593 | Yes | Yes | [83,124–129] |
| NUTS-3 | ITG13 | Messina | 38.015 | 15.053 | Yes | No | [83,85,124,128–136] |
| NUTS-3 | ITG14 | Agrigento | 37.463 | 13.488 | Yes | No | [83,137] |
| NUTS-3 | ITG15 | Caltanissetta | 37.188 | 14.270 | Yes | Yes | [83,138] |
| NUTS-3 | ITG16 | Enna | 37.615 | 14.454 | Yes | No | [83,124] |
| NUTS-3 | ITG17 | Catania | 37.593 | 15.032 | Yes | Yes | [83,85,130,139,140] |
| NUTS-3 | ITG18 | Ragusa | 36.919 | 14.670 | Yes | No | [83,124] |
| NUTS-3 | ITG19 | Siracusa | 37.059 | 15.031 | Yes | No | [83,130,131] |
| NUTS-3 | ITG2D | Sassari | 40.610 | 8.708 | Yes | Yes | [83,141,142] |
| NUTS-3 | ITG2E | Nuoro | 40.397 | 9.474 | Yes | No | [83] |
| NUTS-3 | ITG2F | Cagliari | 39.416 | 9.187 | Yes | Yes | [83,85,143–145] |
| NUTS-3 | ITG2G | Oristano | 40.001 | 8.730 | Yes | No | [83] |
| NUTS-3 | ITG2H | Sud Sardegna | 39.506 | 8.698 | Yes | No | [83] |
| NUTS-3 | ITH10 | Bolzano-Bozen | 46.705 | 11.424 | Yes | No | [83,85] |
| NUTS-3 | ITH20 | Trento | 46.131 | 10.859 | Yes | Yes | [83,100] |
| NUTS-3 | ITH31 | Verona | 45.419 | 11.048 | Yes | No | [83,85] |
| NUTS-3 | ITH32 | Vicenza | 45.656 | 11.506 | Yes | No | [83,85] |
| NUTS-3 | ITH33 | Belluno | 46.313 | 12.172 | Yes | No | [83,85] |
| NUTS-3 | ITH34 | Treviso | 45.795 | 12.209 | Yes | No | [83,85,146] |
| NUTS-3 | ITH35 | Venezia | 45.696 | 12.831 | Yes | No | [83,85,146] |
| NUTS-3 | ITH36 | Padova | 45.350 | 11.798 | Yes | No | [83,146–148] |
| NUTS-3 | ITH37 | Rovigo | 45.044 | 11.818 | Yes | No | [83,85] |
| NUTS-3 | ITH41 | Pordenone | 46.093 | 12.693 | Yes | No | [83] |
| NUTS-3 | ITH42 | Udine | 46.239 | 13.157 | Yes | No | [83,85] |
| NUTS-3 | ITH43 | Gorizia | 45.862 | 13.497 | Yes | No | [83] |
| NUTS-3 | ITH44 | Trieste | 45.651 | 13.819 | Yes | No | [83,85] |
| NUTS-3 | ITH51 | Piacenza | 44.861 | 9.610 | Yes | No | [83] |
| NUTS-3 | ITH52 | Parma | 44.676 | 10.026 | Yes | Yes | [83,149,150] |
| NUTS-3 | ITH53 | Reggio nell’Emilia | 44.597 | 10.526 | Yes | Yes | [83,150] |
| NUTS-3 | ITH54 | Modena | 44.534 | 10.900 | Yes | Yes | [83,85,150–154] |
| NUTS-3 | ITH55 | Bologna | 44.424 | 11.359 | Yes | Yes | [83,85,150,155–167] |
| NUTS-3 | ITH56 | Ferrara | 44.781 | 11.855 | Yes | Yes | [83,85,165,168] |
| NUTS-3 | ITH57 | Ravenna | 44.370 | 12.010 | Yes | Yes | [83,150,165] |
| NUTS-3 | ITH58 | Forlì-Cesena | 44.043 | 12.038 | Yes | Yes | [83,85,150,164,169] |
| NUTS-3 | ITH59 | Rimini | 43.940 | 12.436 | Yes | Yes | [83,150,158] |
| NUTS-3 | ITI11 | Massa-Carrara | 44.251 | 10.012 | Yes | No | [83] |
| NUTS-3 | ITI12 | Lucca | 44.007 | 10.431 | Yes | No | [83,170] |
| NUTS-3 | ITI13 | Pistoia | 43.972 | 10.850 | Yes | No | [83] |
| NUTS-3 | ITI14 | Firenze | 43.817 | 11.291 | Yes | No | [83] |
| NUTS-3 | ITI15 | Prato | 43.955 | 11.091 | Yes | No | [83] |
| NUTS-3 | ITI16 | Livorno | 43.147 | 10.462 | Yes | No | [83,171] |
| NUTS-3 | ITI17 | Pisa | 43.509 | 10.667 | Yes | No | [83,172–178] |
| NUTS-3 | ITI18 | Arezzo | 43.540 | 11.856 | Yes | No | [83,179] |
| NUTS-3 | ITI19 | Siena | 43.190 | 11.461 | Yes | Yes | [83,85,166,180,181] |
| NUTS-3 | ITI1A | Grosseto | 42.780 | 11.234 | Yes | No | [83,85,170,182–184] |
| NUTS-3 | ITI21 | Perugia | 43.067 | 12.531 | Yes | No | [83,179,185–187] |
| NUTS-3 | ITI22 | Terni | 42.671 | 12.359 | Yes | No | [83] |
| NUTS-3 | ITI31 | Pesaro e Urbino | 43.697 | 12.673 | Yes | No | [83] |
| NUTS-3 | ITI32 | Ancona | 43.511 | 13.168 | Yes | Yes | [83,100,188,189] |
| NUTS-3 | ITI33 | Macerata | 43.193 | 13.253 | Yes | No | [83,179] |
| NUTS-3 | ITI34 | Ascoli Piceno | 42.880 | 13.543 | Yes | No | [83] |
| NUTS-3 | ITI35 | Fermo | 43.087 | 13.586 | Yes | No | [83,85] |
| NUTS-3 | ITI41 | Viterbo | 42.432 | 11.996 | Yes | No | [83] |
| NUTS-3 | ITI42 | Rieti | 42.381 | 12.956 | Yes | Yes | [83,190] |
| NUTS-3 | ITI43 | Roma | 41.927 | 12.558 | Yes | Yes | [83,85,98,191–193] |
| NUTS-3 | ITI44 | Latina | 41.428 | 13.135 | Yes | No | [83] |
| NUTS-3 | ITI45 | Frosinone | 41.612 | 13.525 | Yes | No | [83] |
| Kosovo | GAUL-1 | XKG125385 | Pecki | 42.597 | 20.410 | Yes | No | [194] |
| GAUL-1 | XKG125389 | Prizremski | 42.246 | 20.720 | Yes | No | [194] |
| Malta | NUTS-3 | MT001 | Malta | 35.888 | 14.428 | Yes | Yes | [195–197] |
| NUTS-3 | MT002 | Gozo and Comino/Għawdex u Kemmuna | 36.048 | 14.241 | No | Yes | [196] |
| Montenegro | GAUL-1 | MEG125351 | Bar | 42.160 | 19.150 | No | Yes | [198] |
| GAUL-1 | MEG125352 | Berane | 42.858 | 19.895 | No | Yes | [198] |
| GAUL-1 | MEG125355 | Cetinje | 42.480 | 18.870 | No | Yes | [198] |
| GAUL-1 | MEG125356 | Danilovgrad | 42.595 | 19.099 | No | Yes | [198] |
| GAUL-1 | MEG125357 | Herceg Novi | 42.505 | 18.532 | Yes | Yes | [198,199] |
| GAUL-1 | MEG125359 | Kotor | 42.535 | 18.649 | No | Yes | [198] |
| GAUL-1 | MEG125361 | Niksic | 42.835 | 18.804 | No | Yes | [198] |
| GAUL-1 | MEG125365 | Podgorica | 42.472 | 19.334 | No | Yes | [198] |
| GAUL-1 | MEG125366 | Rozaj | 42.860 | 20.187 | No | Yes | [198] |
| GAUL-1 | MEG125369 | Ulcinj | 41.976 | 19.283 | No | Yes | [198] |
| North Macedonia | NUTS-3 | MK008 | Skopski | 41.959 | 21.455 | Yes | No | [200] |
| Portugal | NUTS-3 | PT111 | Alto Minho | 41.886 | -8.499 | Yes | No | [201–203] |
| NUTS-3 | PT112 | Cávado | 41.622 | -8.457 | Yes | No | [201,202] |
| NUTS-3 | PT11A | Área Metropolitana do Porto | 41.077 | -8.475 | Yes | Yes | [201,202,204–206] |
| NUTS-3 | PT11D | Douro | 41.155 | -7.410 | Yes | Yes | [201,202,205,207–210] |
| NUTS-3 | PT11E | Terras de Trás-os-Montes | 41.577 | -6.823 | Yes | No | [201,202] |
| NUTS-3 | PT150 | Algarve | 37.242 | -8.133 | Yes | Yes | [201,202,205,211–218] |
| NUTS-3 | PT16B | Oeste | 39.280 | -9.128 | Yes | No | [219] |
| NUTS-3 | PT16D | Região de Aveiro | 40.620 | -8.514 | Yes | Yes | [201,202,220] |
| NUTS-3 | PT16E | Região de Coimbra | 40.215 | -8.319 | Yes | Yes | [201,202,205,220] |
| NUTS-3 | PT16F | Região de Leiria | 39.818 | -8.664 | Yes | Yes | [201,205,221] |
| NUTS-3 | PT16G | Viseu Dão Lafões | 40.704 | -7.924 | Yes | Yes | [201,202,220] |
| NUTS-3 | PT16H | Beira Baixa | 39.898 | -7.424 | Yes | Yes | [201,202,205,220,222] |
| NUTS-3 | PT16I | Médio Tejo | 39.603 | -8.271 | Yes | No | [222–225] |
| NUTS-3 | PT16J | Beiras e Serra da Estrela | 40.520 | -7.277 | Yes | Yes | [201,202,220,226] |
| NUTS-3 | PT170 | Área Metropolitana de Lisboa | 38.731 | -9.045 | Yes | Yes | [201,202,205,211,214,227–250] |
| NUTS-3 | PT184 | Baixo Alentejo | 37.872 | -7.804 | Yes | No | [201,202,251] |
| NUTS-3 | PT185 | Lezíria do Tejo | 39.120 | -8.610 | Yes | Yes | [201,202,205,220] |
| NUTS-3 | PT186 | Alto Alentejo | 39.191 | -7.615 | Yes | Yes | [201,205,252] |
| NUTS-3 | PT187 | Alentejo Central | 38.605 | -7.841 | Yes | No | [201,202,253,254] |
| Romania | NUTS-3 | RO224 | Galaţi | 45.799 | 27.767 | Yes | No | [255] |
| NUTS-3 | RO311 | Argeş | 45.036 | 24.889 | Yes | No | [256] |
| NUTS-3 | RO411 | Dolj | 44.138 | 23.618 | Yes | No | [257] |
| NUTS-3 | RO415 | Vâlcea | 45.099 | 24.113 | Yes | No | [258] |
| San Marino | Country | SM | San Marino | 43.937 | 12.463 | Yes | No | [259] |
| Serbia | GAUL-1 | RSG125372 | Branicevski | 44.464 | 21.530 | Yes | No | [260] |
| GAUL-1 | RSG125373 | Grad Beograd | 44.657 | 20.425 | Yes | No | [260] |
| GAUL-1 | RSG125375 | Juzno-backi | 45.400 | 19.748 | Yes | No | [261] |
| GAUL-1 | RSG125383 | Nisavski | 43.405 | 21.876 | No | Yes | [262] |
| GAUL-1 | RSG125387 | Podunavski | 44.467 | 20.971 | Yes | No | [260] |
| GAUL-1 | RSG125388 | Pomoravski | 43.985 | 21.371 | Yes | No | [260] |
| Slovenia | NUTS-3 | SI037 | Jugovzhodna Slovenija | 45.714 | 15.024 | Yes | No | [263] |
| Spain | NUTS-3 | ES111 | A Coruña | 43.130 | -8.452 | Yes | Yes | [264,265], CMBD3 |
| NUTS-3 | ES112 | Lugo | 43.015 | -7.447 | Yes | Yes | [264–266], CMBD3 |
| NUTS-3 | ES113 | Ourense | 42.194 | -7.590 | Yes | Yes | [265,267], CMBD3 |
| NUTS-3 | ES114 | Pontevedra | 42.442 | -8.455 | Yes | Yes | [265], CMBD3 |
| NUTS-3 | ES120 | Asturias | 43.297 | -5.986 | Yes | Yes | [264,265,267–270], CMBD3 |
| NUTS-3 | ES130 | Cantabria | 43.201 | -4.029 | Yes | Yes | [264,265,267,268], CMBD3 |
| NUTS-3 | ES211 | Araba/Álava | 42.839 | -2.714 | Yes | Yes | [265], CMBD3 |
| NUTS-3 | ES212 | Gipuzkoa | 43.145 | -2.203 | Yes | Yes | [264], CMBD3 |
| NUTS-3 | ES213 | Bizkaia | 43.243 | -2.854 | Yes | Yes | [264], CMBD3 |
| NUTS-3 | ES220 | Navarra | 42.681 | -1.646 | Yes | Yes | [264,265,268], CMBD3 |
| NUTS-3 | ES230 | La Rioja | 42.279 | -2.504 | Yes | Yes | [265,268], CMBD3 |
| NUTS-3 | ES241 | Huesca | 42.206 | -0.076 | Yes | Yes | [264,271], CMBD3 |
| NUTS-3 | ES242 | Teruel | 40.659 | -0.826 | No | Yes | CMBD3 |
| NUTS-3 | ES243 | Zaragoza | 41.620 | -1.062 | Yes | Yes | [265,272,273], CMBD3 |
| NUTS-3 | ES300 | Madrid | 40.497 | -3.711 | Yes | Yes | [5,265,268,274–320], CMBD3 |
| NUTS-3 | ES411 | Ávila | 40.572 | -4.940 | No | Yes | CMBD3 |
| NUTS-3 | ES412 | Burgos | 42.371 | -3.584 | No | Yes | CMBD3 |
| NUTS-3 | ES413 | León | 42.626 | -5.839 | No | Yes | CMBD3 |
| NUTS-3 | ES414 | Palencia | 42.365 | -4.536 | No | Yes | CMBD3 |
| NUTS-3 | ES415 | Salamanca | 40.809 | -6.062 | Yes | Yes | [265], CMBD3 |
| NUTS-3 | ES416 | Segovia | 41.166 | -4.057 | No | Yes | CMBD3 |
| NUTS-3 | ES417 | Soria | 41.627 | -2.595 | Yes | Yes | [321], CMBD3 |
| NUTS-3 | ES418 | Valladolid | 41.630 | -4.848 | Yes | Yes | [322,323], CMBD3 |
| NUTS-3 | ES419 | Zamora | 41.735 | -5.984 | Yes | Yes | [265], CMBD3 |
| NUTS-3 | ES421 | Albacete | 38.826 | -1.981 | Yes | Yes | [265], CMBD3 |
| NUTS-3 | ES422 | Ciudad Real | 38.928 | -3.823 | Yes | Yes | [265,324], CMBD3 |
| NUTS-3 | ES423 | Cuenca | 39.898 | -2.195 | No | Yes | CMBD3 |
| NUTS-3 | ES424 | Guadalajara | 40.815 | -2.626 | Yes | Yes | [265,302,307], CMBD3 |
| NUTS-3 | ES425 | Toledo | 39.795 | -4.152 | Yes | Yes | [265,307], CMBD3 |
| NUTS-3 | ES431 | Badajoz | 38.709 | -6.137 | Yes | Yes | [265,325], CMBD3 |
| NUTS-3 | ES432 | Cáceres | 39.716 | -6.164 | Yes | Yes | [265], CMBD3 |
| NUTS-3 | ES511 | Barcelona | 41.732 | 1.977 | Yes | Yes | [265,326–344], CMBD3 |
| NUTS-3 | ES512 | Girona | 42.132 | 2.668 | Yes | Yes | [264,265,345,346], CMBD3 |
| NUTS-3 | ES513 | Lleida | 42.048 | 1.046 | Yes | Yes | [264,265,347–349], CMBD3 |
| NUTS-3 | ES514 | Tarragona | 41.089 | 0.817 | Yes | Yes | [265,347,350], CMBD3 |
| NUTS-3 | ES521 | Alicante/Alacant | 38.486 | -0.570 | Yes | Yes | [265,351–355], CMBD3 |
| NUTS-3 | ES522 | Castellón/Castelló | 40.238 | -0.150 | Yes | Yes | [265,356], CMBD3 |
| NUTS-3 | ES523 | Valencia/València | 39.369 | -0.794 | Yes | Yes | [265,354,357–363], CMBD3 |
| NUTS-3 | ES531 | Eivissa y Formentera | 38.918 | 1.430 | Yes | Yes | [5,265,364], CMBD3 |
| NUTS-3 | ES532 | Mallorca | 39.615 | 2.962 | Yes | Yes | [5,265,365–371] |
| NUTS-3 | ES533 | Menorca | 39.963 | 4.072 | Yes | No | [265,365] |
| NUTS-3 | ES611 | Almería | 37.197 | -2.344 | Yes | Yes | [265], CMBD3 |
| NUTS-3 | ES612 | Cádiz | 36.551 | -5.759 | Yes | Yes | [265,372], CMBD3 |
| NUTS-3 | ES613 | Córdoba | 37.994 | -4.810 | Yes | Yes | [265], CMBD3 |
| NUTS-3 | ES614 | Granada | 37.315 | -3.260 | Yes | Yes | [265,373–385], CMBD3 |
| NUTS-3 | ES615 | Huelva | 37.568 | -6.828 | Yes | Yes | [265], CMBD3 |
| NUTS-3 | ES616 | Jaén | 38.020 | -3.451 | Yes | Yes | [265], CMBD3 |
| NUTS-3 | ES617 | Málaga | 36.814 | -4.728 | Yes | Yes | [265], CMBD3 |
| NUTS-3 | ES618 | Sevilla | 37.433 | -5.683 | Yes | Yes | [265], CMBD3 |
| NUTS-3 | ES620 | Murcia | 38.001 | -1.479 | Yes | Yes | [265,268,386–397], CMBD3 |
| NUTS-3 | ES630 | Ceuta | 35.897 | -5.355 | No | Yes | CMBD3 |
| NUTS-3 | ES640 | Melilla | 35.294 | -2.950 | No | Yes | CMBD3 |
| Ukraine | GAUL-1 | UAG13158 | Krym | 45.305 | 34.350 | No | Yes | [398] |

1Ministry of Health of Bulgaria. Data provided by the National Centre for Infectious and Parasitic Diseases. Data provided by Dr. Ognyan Mikov.

2Ministry of Health of Greece. Data provided by the Hellenic National Public Health Organization in the context of a technical report commissioned and coordinated by ECDC.

3National Information System for Hospital Data (Conjunto Mínimo Básico de Datos). Data from 2005 to 2020 requested to the Unit of Health Care Information and Statistics. Institute of Health Information. Spanish Ministry of Health. by e-mail (icmbd@sanidad.gob.es) in February 2022.

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