**Supplementary file 1**

**Table S1. Data extraction table**

| Author                        | Country | Duration | Type of Group                  | Type of Treat meant                              | sample size | Age |
|-------------------------------|---------|----------|--------------------------------|-------------------------------------------------|-------------|-----|
| Marchesini et al (2001)       | Italy   | 4 M      | NASH                           | Metformin 1500 mg/day                            | Group1: 14   | 40  |
|                               |         |          |                                | Diet                                            | Group2: 6    |     |
|                               |         |          |                                |                                                 | Group3: 40   |     |
| Athyros et al (2006)          | Greece  | 54 W     | NAFLD (metabolic syndrome)     | Atorvastatin, 20 mg/day                          | Group1: 63   | 60  |
|                               |         |          |                                | Fenofibrate, 200 mg/day                          | Group2: 62   |     |
|                               |         |          |                                |                                                 | Group3: 60   |     |
| Ratziu et al (2008)           | France  | 1 Y      | NASH                           | Rosiglitazone (8mg/day)                          | Group1: 32   | 53.1|
|                               |         |          |                                | Placebo                                         | Group2: 31   | 54.1|
| Hatzitolios A. et al (2004)   | Greece  | 24 W     | NAFLD with dyslipidemia        | Omega3 5ml t.i.d.                                | Group1: 23   | 52  |
|                               |         |          |                                | Atorvastatin 20mg                                | Group2: 28   |     |
|                               |         |          |                                | Orlistat 120 mg t.i.d.                           | Group3: 21   |     |
|                               |         |          |                                |                                                 | Group1: 53   |     |
|                               |         |          |                                |                                                 | Group2: 50   |     |
| Fan H. et al (2013)           | China   | 12 W     | T2 diabetes with NAFLD         | Exenatide injection 10mcg b.i.d.                | Group1: 49   | 51.02|
|                               |         |          |                                | Metformin 2g/day                                 | Group2: 68   | 54.68|
| CAPANNI M. et al (2006)       | Italy   | 12 M     | NAFLD                          | Placebo                                         | Group1: 14   | 56  |
|                               |         |          |                                | n-3 PUFA                                        | Group2: 42   |     |
| Solhi H. et al (2014)         | Iran    | 8 W      | NASH                           | Silymarin                                       | Group1: 33   | 43.6|
|                               |         |          |                                | Placebo                                         | Group2: 31   | 39.36|
| Khoshbaten M. et al (2010)    | Iran    | 3 M      | NAFLD                          | N-acetylcysteine                                | Group1: 15   | 40.1|
|                               |         |          |                                | Vit C                                           | Group2: 15   | 46.8|
| Lindor K. et al (2004)        | Canada, US | 2 Y     | NASH                           | 13 to 15 mg/kg/d of oral UDCA                   | Group1: 80   | 45.4|
|                               |         |          |                                | Placebo                                         | Group2: 86   | 48.5|
| Zein C. et al (2011)          | USA     | 1 Y      | NASH                           | Pentoxifylline 400 mg t.i.d.                    | Group1: 26   | 50.5|
|                               |         |          |                                | Placebo                                         | Group2: 29   | 49.6|
| Study                         | Country | Gender | Disease                  | Intervention 1 | Intervention 2 | Baseline 1 | Baseline 2 | Baseline 3 | Baseline 4 |
|-------------------------------|---------|--------|--------------------------|----------------|----------------|------------|------------|------------|------------|
| Muhammad Amjad Pervez (2017)  |         | 12M    | NAFLD                    | Tocotrienol    | PLACEBO        | 31         | 33         | 44.7       | 43.9       |
| K. Shahebrahimi (2017)        |         |        | NAFLD                    | two gr/day metformin | 30 mg/day pioglitazone | 800 IU/D VITAMIN E | 31 | 31 | 31 | 43.87 | 43.87 | 43.87 |
| Chan Wah Kheong (2017)        | Malaysia| 22 M   | NAFLD                    | silymarin      | placebo        | 49         | 50         | 49.6       | 50.1       |
| Jan Oscarsson (2018)          | Sweden  | 3 M    | hypertriglyceridemia OR NAFLD | Placebo       | Omega-3        | 26         | 25         | 27         | 59.5       | 60     | 64     |
| Daisuke Ito (2017)            | Japan   | 13 M   | NAFLD AND DM-T2          | Pioglitazone group | Ipragliflozin group | 34         | 32         | 59.1       | 57.3       |
| Somayyeh Asghari (2018)       | Iran    | 3 M    | NAFLD                    | placebo        | Resveratrol    | 30         | 30         | 38.5       | 40         |
| K. CELINSKI (2014)            | POLAND  | 14 M   | NAFLD                    | tryptophan     | melatonin      | 28         | 23         | 23         |            |
| Srinivasan Dasarathy, MD      | USA     | 12 M   | NAFLD AND DM             | omega 3 fatty acids | placebo (CORN OIL) | 18         | 19         | 51.5       | 49.8       |
| Abdelmalek (2009)             | USA     | 27 M   | NAFLD                    | Betaine        | Placebo        | 27         | 28         | 47.8       | 45.7       |
| Alam (2016)                   | Italy   | 34 M   | NAFLD                    | Telmisartan    | underwent lifestyle modification alone | 20 | 10 | 43.3 | 37.9 |
| ALLER (2011)                  | Spain   | 3 M    | NAFLD                    | probiotic      | placebo        | 14         | 14         |            |            |
| Argo (2015)                   | USA     | 3 Y    | NAFLD                    | Placebo        | N-3 PUFA       | 17         | 17         | 47.2       | 46.4       |
| Armstrong (2016)              | UK      | 48 W   | non-alcoholic steatohepatitis | liraglutide   | Placebo        | 26         | 26         | 50         | 52         |
| Balas (2007)                  | USA     | 4 W    | impaired glucose tolerance or T2DM and NASH | pioglitazone | Placebo        | 21         | 14         | 46.4       | 51         |
| Study                  | Country | Duration | Diagnosis                  | Treatment 1                  | Treatment 2                  | Group 1 | Group 2 |  |  |  |  |
|-----------------------|---------|----------|----------------------------|-----------------------------|----------------------------|---------|---------|  |  |  |  |
| Baniasadi (2015)      | Iran    | 6 M      | NASH                       | pantothenic acid            | Placebo                    | 15      | 15      | 35.7 | 39.4 |  |  |
| Belfort (2006)        | USA     | 6 M      | nonalcoholic steatohepatitis | Placebo                    | Pioglitazone               | 21      | 26      | 51   | 51   |  |  |
| Chachay (2014)        | Australia | 8 W     | NAFLD                      | resveratrol                 | PLACEBO                     | 10      | 10      | 48.8 | 47.5 |  |  |
| Chen (2015)           | China   | 3 M      | NAFLD                      | Placebo                     | Resveratrol                | 30      | 30      | 43.5 | 45.2 |  |  |
| Cui (2016)            | USA     | 6 M      | hepatic steatosis          | sitagliptin                 | placebo                    | 25      | 25      | 52.9 | 54.9 |  |  |
| Cusi (2016)           | USA     | 6 Y      | NASH and prediabetes or T2DM | Placebo                    | Pioglitazone               | 51      | 50      | 49   | 52   |  |  |
| Deng (2017)           | China   | 3 Y      | NAFLD AND T2DM             | Sitagliptin                 | Diet                        | 36      | 36      | 63.7 | 64.1 |  |  |
| Ebrahimi-Mameghani (2016) | Iran  | 15 M    | NAFLD                      | DIET                        | linoleic acid              | 19      | 19      | 36.74 | 38.58 |  |  |
| Ekhlasi (2017)        | Iran    | 3 M      | NAFLD                      | Probiotic                   | Placebo                    | 32      | 32      | 12.7 | 12.6 |  |  |
| Esilamparast (2014)   | Iran    | 28 W     | NAFLD                      | Synbiotic                   | Placebo                    | 26      | 26      | 46.35 | 45.69 |  |  |
| Faghihzaadeh (2014)   | Iran    | 12 W     | NAFLD                      | Resveratrol                 | PLACEBO                     | 25      | 25      | 44.04 | 46.28 |  |  |
| Feng (2017)           | China   | 6 M      | T2DM with NAFLD            | Liraglutide                 | Gliclazide                 | 29      | 29      | 29   | 46.79 | 48.07 | 46.31 |
| Garinis (2010)        | Italy   | 6 M      | NAFLD                      | Metformin                   | Diet                        | 20      | 25      | 40.8 | 45.8 |  |  |
| Hajiaghomahamadi (2012) | Iran  | 4 M      | NAFLD                      | Pioglitazone                | Metformin                  | 22      | 22      | 22   | 32.62 | 32.62 | 32.62 |
| Han (2014)            | China   | 6 M      | NAFLD                      | METFORMIN                   | Vitamin E                  | 112     | 111     |  |  |  |  |
| Harrison (2003)       | USA     | 6 M      | Nonalcoholic Steatohepatitis | Placebo                    | Vitamin E, VIT. C           | 22      | 23      | 50.2 | 52.5 |  |  |
| Harrison (2009)       | USA     | 24 M     | Nonalcoholic Steatohepatitis | DIET Group                  | Orlistat Group             | 18      | 23      | 45.8 | 47.9 |  |  |
| Study                          | Country   | Gender | Disease          | Treatment 1 | Treatment 2 | Duration | Age 1 | Age 2 | % Fat Loss | Age 1   | Age 2   |
|-------------------------------|-----------|--------|------------------|-------------|-------------|----------|-------|-------|------------|---------|---------|
| Haukeland (2009)              | Norway    | 6 M    | NAFLD            | Placebo     | Metformin   | 24       | 20    |       |            | 49.9    | 44.3    |
| Heebøll (2016)                | Denmark   | 6 M    | NAFLD            | Resveratrol | Placebo     | 13       | 13    |       |            |         |         |
| Hirata (2013)                 | Japan     | 12 M   | NAFLD and hypertension | Telmisartan | Losartan    | 12       | 7     |       |            | 57.7    | 60.3    |
| Hussain (2016)                | Pakistan  | 12 W   | NAFLD            | Vildagliptin | Placebo     | 29       | 29    |       |            | 28      | 31      |
| Khoo (2017)                   | Singapore | 21 M   | NAFLD            | diet        | Liraglutide | 12       | 12    |       |            | 43.7    | 39      |
| LE (2012)                     | USA       | 24 W   | NASH             | Colesevelam | Placebo     | 25       | 25    |       |            | 45.4    | 50.3    |
| Lee (2008)                    | Singapore | 3 M    | NASH             | Pentoxifylline | Placebo   | 11       | 9     |       |            | 47      | 47.89   |
| Leuschner (2010)              | Germany and Greece | 18 M | NASH | UCDA | Placebo | 95 | 91 |       |            | 41.45 | 45.02   |
| Li (2015)                     | China     | 6 M    | NASH             | PLACEBO     | PUFA        | 39       | 39    |       |            | 50.4    | 52.6    |
| Loomba (2015)                 | USA       | 24 W   | NASH             | Ezetimibe   | Placebo     | 25       | 25    |       |            | 49      | 49.5    |
| McPherson (2017)              | UK        | 2 Y    | NAFLD            | Losartan    | PLACEBO     | 24       | 21    |       |            | 58      | 45      |
| Mendez-Sanchez (2004)         | Mexico    | 6 W    | NAFLD            | UCDA        | PLACEBO     | 12       | 11    |       |            | 39.7    | 37.8    |
| Merat (2003)                  | Iran      | 6 M    | NASH             | drug:probuco l | PLACEBO  | 18      | 9     |       |            | 36.3    | 35.9    |
| Mofidi (2017)                 | Iran      | 28 W   | NAFLD            | synbiotic supplementation | placebo | 21 | 21 |       |            | 40.9    | 44.61   |
| van Wagner (2011)             | USA       | 3 Y    | NAFLD            | PANTOXYPHYLINE 400 mg | placebo | 21 | 9  |       |            | 48      | 53      |
| Zelber-Sagi (2006)            | Israel    | 2 M    | NAFLD            | orlistat 120 mg | placebo | 21 | 23 |       |            | 48.4    | 47      |
| Wah Kheong (2017)             | Malaysia  | 2 Y    | NAFLD            | silymarin 700 mg | placebo | 49 | 50 |       |            | 49.6    | 50.1    |
| Wong (2013)                   | China     | 6 M    | NAFLD            | probiotic   | DIATE       | 10       | 10    |       |            | 42      | 55      |
| Tiikkainen (2004)             | Finland   | 16 W   | NAFLD            | Rosiglitazone | Metformin | 9 | 11  |       |            | 50      | 46      |
| Study                  | Country | Duration | Diagnosis          | Treatment 1                | Treatment 2                | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 | Week 10 | Week 11 | Week 12 |
|------------------------|---------|----------|--------------------|---------------------------|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Zhu (2008)             | China   | 24 W     | NAFLD              | placebo                   | placebo                   | 25     | 20     | 21     | 53.1   | 52.7   | 50.5   |
| Mudaliar (2013)        | USA     | 6 W      | NAFLD AND T2DM    | Placebo                   | Placebo                   | 66     | 68     | 45     | 44.03  |
| Nelson (2009)          | USA     | 72 W     | FLINT              | Obeticholic acid          | PLACEBO                   | 141    | 142    | 52     | 51     |
| Nogueira (2016)        | Brazil  | 6 M      | NASH               | OMEGA - 3                 | Placebo                   | 27     | 23     | 53.9   | 52.5   |
| Omer (2009-10)         | Turkey  | 1 Y      | NAFLD              | metaformin                | Rosiglitazone             | 22     | 20     | 22     | 48     | 49.3   | 49.6   |
| PAKRAVAN(2017)         | Iran    | 3 M      | NAFLD              | Melatonin                 | PLACEBO                   | 47     | 48     | 42.5   | 40.6   |
| Parikh (2016)          | India   | 52 W     | NAFLD              | (Vitamin E)               | (UDCA)                    | 95     | 138    | 43.75  | 40.19  |
| Ratziu (2016)          | USA     | 52 W     | NAFLD              | Placebo                   | Elafibranor, 80 mg       | 92     | 93     | 89     | 52.4   | 52.7   | 52.4   |
| Razavizade(2013)       | Iran    | 4 M      | NAFLD              | Metformin                 | Pioglitazone              | 40     | 40     | 36.35  | 34.2   |
| Santos (2003)          | Brazil  | 3 M      | NAFLD              | UDCA                      | PLACEBO                   | 15     | 15     | 38.4   | 36.6   |
| SANYAL (2010)          | USA     | 96 W     | NASH               | Placebo                   | Vitamin E                 | 83     | 84     | 80     | 45.4   | 46.6   | 47     |
| SANYAL (2014)          | USA     | 2 Y      | NASH               | Placebo                   | Pioglitazone              | 72     | 82     | 86     | 50.5   | 47.8   | 47.8   |
| Sharma (2012)          | India   | 6 M      | NASH               | Pentoxifylline            | Pioglitazone              | 11     | 9      | 37.3   | 40.4   |
| Qin (2015)             | China   | 3 M      | NAFLD              | CORN OIL                  | FISH OIL                  | 34     | 36     | 44.3   | 46     |
| Shibuya (2017)         | Japan   | 3 M      | NAFLD              | Luseogliflozin            | Metformin                 | 16     | 16     | 51     | 60     |
| Takeshita (2014)       | Japan   | 6 M      | NAFLD              | DIET                      | Ezetimibe                 | 14     | 17     | 55.5   | 50.4   |
| Sofi (2010)            | Italy   | 12 M     | NAFLD              | N3 PUFA                   | diet                      | 6      | 5      | 55     | 54     |
| Chen (2008)            | China   | 24 W     | NAFLD or NASH      | Placebo                   | Omega-3 8cap/day          | 16     | 15     | 15     | 45     | 47     | 46     |
| Study                | Country | Duration (W) | Disease | Treatment/Placebo | Outcome Measures | Age (Mean) | BMI (Mean) |
|----------------------|---------|--------------|---------|-------------------|------------------|------------|------------|
| Shenoy (2014)        | Italy   | 16           | NASH    | Metadoxine 500mg/day | Placebo          | 75         | 59         |
|                      |         |              |         |                   |                  | 39.8       | 41.1       |
| Hameed (2017)        | USA     | 96           | NASH    | Obeticholic acid+weight loss | Placebo+weight loss | 102        | 98         |
|                      |         |              |         |                   |                  | 52         | 50         |
| Amirkhizi (2018)     | Iran    | 12           | NAFLD with obesity | ALA | Placebo          | 23         | 22         |
|                      |         |              |         |                   |                  | 40.6       | 38.8       |
| Shafi Kuchay (2018)  | India   | 20           | NAFLD Patients with Type 2 Diabetes | Empagliflozin diet | Placebo          | 22         | 20         |
| Sofer (2011)         | Israel  | 16           | NAFLD   | Metformin         | Placebo          | 32         | 31         |
| Abenavoli (2017)     | Italy   | 24           | NAFLD   | Mediterranean diet without drug | Placebo          | 20         | 10         |
|                      |         |              |         |                   |                  | 52         | 33         |