What is new for an old Molecule? Systematic Review and Recommendations on the use of Resveratrol

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Supporting information:

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| **Table S3:** Effect of resveratrol on obesity and models for diabetes in experimental animals | | | | | | |
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| **Species / Strain** | **Treatment** | **Resveratrol dose** | **Duration** | **Effect** | | **References** |
| Insulin sensitivity | | | | | | |
| Male Sprague-Dawley rats | High cholesterol–fructose (HCF) diet for 15  weeks | 1 mg Resv/ kg bw/ day, po | 15 days / 15 weeks | Metabolic characteristics of rats on an HCF diet shifted toward a standard diet.  Insulin-stimulated whole-body glucose uptake ↑  Steady-state glucose uptake of soleus muscle and liver in HCF-fed rats ↑ | | [1] |
| Male Wistar rats | High-fat diet (59% from fat) for 6 weeks | 100 mg Resv/kg bw/ day po | 10 weeks (16 weeks in total) | lipid accumulation in the liver ↓  Abdominal obesity ↓  Insulin resistance ↓  Fasting serum insulin ↓ | | [2] |
| Male Wistar rats | Single ip injection of 50 mg STZ/ kg | 5 mg Resv/ kg bw/ day po | 30 days | Serum insulin↓ | | [3] |
| Lean / Obese Zucker rats |  | 10 mg Resv/ kg /day po | 4 weeks/ 8 weeks | fasting plasma insulin concentration ↓ ( 4 weeks) | | [4] |
| Male C57Bl/6J mice |  | 200 or 400 mg Resv/ kg bw/ day | 9 weeks | Insulin sensitivity ↑ | | [5] |
| male C57BL/6NIA mice | high-calorie diet | 22.4 mg Resv/ kg bw/ day | 6 months | Fasting serum insulin ↓ | | [6] |
| IRS2-/- mice |  | 25mg Resv/ml in drinking water (~ 2.5 mg Resv/ kg bw/ day) | 8 weeks | systemic insulin sensitivity ↑  glucose tolerance → | | [7] |
| AMPKα1-/- and wild-type C57BL/6J mice | Fed a high-fat diet (40% from fat) | 400 mg Resv/ kg bw/ day | 12 weeks | Metabolic rate ↑  Insulin sensitivity → | | [8] |
| C57BL/6 male mice | High-calorie diet (58% from fat) - 14 weeks | 79.2 ng Resv/ day, infused intra cerebro ventricularly. | 5 weeks | Serum insulin ↓ | | [9] |
| Male New Zealand rabbits | Diabetes induced with alloxan (100 mg/kg) and  maintained for 8 weeks | 5 or 50 mg Resv/ L drinking water  (~1.5 or 17 mg/ kg/ day) | 10 weeks, starting 14 days prior alloxan | Serum insulin ↓ | | [10] |
| Blood glucose levels | | | | | | |
| Male Wistar rats | High-fat diet for 30 days | 1 mg Resv/ kg bw/ day via drinking water | 15 days | Serum glucose ↓ | | [11] |
| Male Wistar rats | Single ip injection of 50 mg STZ/ kg | 5 mg Resv/ kg po | 30 days | Serum glucose ↓ | | [3] |
| Sprague–Dawley rats | A single iv injection of 65 mg STZ/kg for 2 weeks | 0.1 or 1 mg Resv/ kg bw/ day +/- 1 mg insulin/ kg bw/ day | 5 days | Plasma glucose ↓ | | [12] |
| Sprague Dawley rats | 65 mg STZ/ kg – 15 days | 2.5 mg Resv/ kg bw/ day | 15 days | Blood glucose ↓ | | [13] |
| Lean / Obese Zucker rats |  | 10 mg Resv/ kg bw/ day po | 4 weeks/ 8 weeks | Fasting levels of glucose ↓ | | [4] |
| Genetically obese mice (Lepob/ob) |  | SRT501 (1,000 mg/ kg) | 3 weeks | Fasting blood glucose ↓ | | [14] |
| Diet-induced obesity (DIO) mice |  | SRT501 (500 mg/ kg) | 4 weeks | Fasting blood glucose ↓  Hyperinsulinaemia in DIO mice ↓ | | [14] |
| Male C57BL/6NIA mice | High-calorie diet | 22.4 mg/ kg / day | 6 months | Fasting glucose ↓ | | [6] |
| Male C57BL/6 mice | High-calorie diet (58% kcal from fat) - 14 weeks | 79.2 ng / day, infused intra cerebro ventricularly | 5 weeks | Blood glucose ↓ | | [9] |
| C57BL/6 mice | Five consecutive ip injections of 55 mg STZ/ kg bw | 20 mg Resv/ kg bw/ day, po | 1 month | Blood glucose ↓ | | [15] |
| Male New Zealand rabbits | Diabetes induced with alloxan (100 mg/ kg bw) and maintained for 8 weeks | 5 or 50 mg Resv/ L drinking water  (~1.5 or 17 mg/ kg bw/ day) | 10 weeks, starting 14 days prior alloxan | Blood glucose → | | [10] |
| Diet-induced obesity | | | | | | |
| Male C57BL/6NIA mice | High-calorie diet | 22.4 mg Resv/ kg bw/ day | 6 months | | Weight gain→ | [6] |
| Male Sprague-Dawley rats | High-caloric diet | 6, 30 or 60 mg Resv/ kg bw/ day | 6 weeks | | Food intake →  Final body weight→  The size of white adipose tissue ↓ | [16] |
| Female Sprague-Dawley rats | High-fat diet (42% from fat) | 20 mg Resv/ kg bw/ day | 8 weeks | | Weight gain →  Food intake of standard diet →  Food intake of high-fat diet ↓ | [17] |
| Lean / Obese Zucker rats |  | 10 mg Resv/ kg bw/ day po | 8 weeks | | Food intake →  Body weight → | [4] |
| Male C57Bl/6J mice |  | 200 or 400 mg/kg bw/day | 9 weeks | | Weight gain ↓  Food intake → | [5] |
| C57BL/6 male mice | high-calorie diet (58% kcal from fat) - 14 weeks | 79.2 ng / day, infused intra cerebro ventricularly | 5 weeks | | Body weight →  Food intake → | [9] |
| AMPKα1-/- and wild-type C57BL/6J mice | Fed a high-fat diet (40% from fat) | 400 mg Resv/ kg bw/ day | 12 weeks | | Food intake →  Body weight of wild-type ↓  AMPKα2-/- mice ↓  AMPKα1-/- mice →  The fat index ↓ in all strains | [8] |
| Grey mouse lemurs |  | 200 mg Resv/ kg bw/ day | 4 weeks | | Weight gain ↓  Food intake ↓ | [18] |
| Visceral fat index and liver mass index | | | | | | |
| Male Wistar rats | high-fat (59% from Fat) – 6 weeks | 100 mg·Resv/ kg bw/ day | 10 week | | Reduced lipid accumulation in liver  Reduced abdominal obesity | [2] |
| Lean / Obese Zucker rats |  | 10 mg Resv/ kg bw/ day, po | 8 weeks | | In obese rats, abdominal fat ↓  plasma triglycerides ↓  Free fatty acids ↓  Total cholesterol ↓ | [4] |
| Male Wistar CRL: Wi (Han) | High carbohydrate - fat free modified diet + induction of steatosis | 10 mg Resv daily po (~ 44 mg/ kg bw/ day) | 4 weeks | | Grade of steatosis ↓ | [19] |
| DIO: Diet-induced obesity; HCF: high cholesterol–fructose; STZ: streptozotocin  bw: body weight; iv: intravenous; ip: intraperitoneally; po: per oral  Effect are indicated by ↓: reduction; ↑: enhancement; →: no effect. | | | | | | |

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